Zodiac Plus

Operator Manual

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At all times the printer must be operated with Interactive Coding Equipment approved spares and consumables. Maintenance not identified in this operating manual must be carried out by Interactive Coding Equipment engineers.

About this Manual

This manual describes how to operate the ICE Zodiac Plus Printer, a specialist printer system for use in production line environments for printing onto a wide range of substrates.

The information contained in this edition of the operating manual is applicable to software Version 1.

Products described in this operating manual are subject to continuous development, and reviews will be made accordingly in subsequent editions. Interactive Coding Equipment will be pleased to receive any correspondence relating to this operating manual and the information contained herein.

For further information or help with Interactive Coding Equipment products, please contact info@interactivecoding.com.

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Safety

1

This chapter contains the following topics:

- Safety conventions used throughout this manual
- Important safety guidelines to be followed when operating the equipment

Warning

PERSONAL INJURY. Read this chapter thoroughly before attempting to install, operate, service, or maintain this product otherwise, it may cause serious injury.

Introduction

The policy of Interactive Coding Equipment is to manufacture printing/coding systems and supplies that meet high standards of performance and reliability. Therefore, we employ strict quality control measures to eliminate the potential for defects and hazards in our products.

The intended use of this printer is to print information directly onto a product. Use of this equipment for any other purpose may lead to serious personal injury.

The safety guidelines provided in this chapter are intended to educate the operator on all safety issues so that the operator can operate the printer safely.

Safety Conventions Used in the Manual

Specific safety information is listed throughout this manual in the form of Warning and Caution statements. Pay close attention to these statements as they contain important information that help in avoiding potential hazards to yourself or to the equipment.

General Warning Notices

The following warnings supplement the specific warnings that appear elsewhere in the manual. These are general warnings that must be read, completely understood, and applied by all the personnel involved in the operation, and/or the maintenance of the machine.

Warning

PERSONAL INJURY. Only trained service or maintenance personnel should perform these installation procedures. Qualified personnel have successfully completed the training courses, have sufficient experience with this printer, and are aware of the potential hazards to which they will be exposed.

Warning

PERSONAL INJURY. Before attempting any maintenance or repair on any part of the product, disconnect the printer from the main power supply and isolate the printer from any external energy sources including other connected equipment.

Warning

PERSONAL INJURY. Before connecting the compressed air supply to the printer, ensure that the air supply has been isolated. Turn the regulator adjustment knob counterclockwise.

Warning

PERSONAL INJURY. The printer uses an operator control console. Ensure that this panel is mounted at an appropriate working height and orientation for ease of operation.

Warning

PERSONAL INJURY. Keep your hands and clothing clear of the printer while it is on.

Warning

PERSONAL INJURY. To ensure that the connecting cables and pipes do not become a trip hazard or become entangled in any machinery, all the connecting cables and pipes must be secured safely during installation.

Warning

ELECTRICAL HAZARD. Voltages used to connect the printer to other equipment must not be greater than 50 V dc or peak ac.

Warning

ELECTRICAL HAZARD. Always wear a properly grounded wrist-ground strap when handling printed circuit boards. Failure to do so can result in damage to the board components due to static electricity.

General Caution Notices

The following caution statements supplement the specific cautions that appear elsewhere in the manual. These are general cautions which must be read, completely understood, and applied by all the personnel involved with the operation, and/or the maintenance of the machine.

Caution

EQUIPMENT DAMAGE. Before and after performing any maintenance or repair on the product, check that the two safety labels are clearly visible. One is on the power supply cover and the other by the potential nip point next to the pulley in the printer body.

Caution

EQUIPMENT DAMAGE. The use of incompatible ribbon can seriously damage your printer and such damage will not be covered by your printer warranty. Use only the ribbon approved by your dealer.

Safety Guidelines

This section contains important safety guidelines on operating and handling the printer and associated equipment.

Warning

PERSONAL INJURY. Always observe the following safety guidelines when operating and handling the printer and associated equipment otherwise, it may cause serious injury.

Comply with Electrical Codes

All electrical wiring and connections must comply with applicable local codes. Consult the appropriate regulatory agency for further information.

Do Not Remove Warning Labels

Do not, under any circumstances, remove or obstruct any warning or instruction labels on the printer.

Placement of the Printer

Warning

PERSONAL INJURY. Do not place the printer in a hazardous location. Hazardous locations might create an explosion, leading to personal injury.

Hazardous locations, as defined in the United States, are those areas that may contain hazardous materials in a quantity sufficient to create an explosion. These are defined in Article 500 of the National Electrical Code ANSI/NFPA 70–1993.

Outside United States, you must ensure compliance with all local regulations regarding the equipment placement in potentially hazardous locations.

Using Printer Accessories

To maintain regulatory approval for the printer, use only ICE approved accessories when attaching any device to the equipment.

Introduction

2

This chapter contains the following topics:

- Description about the intended use of the product
- Information contained in this manual and other manuals associated with this printer
- Description of the CLARiTY™ operating system
- Information on creating and adding new jobs

Warning

PERSONAL INJURY. Read Chapter 1, “Safety” before attempting to operate the equipment otherwise, it may cause serious injury.

Equipment Description

The Zodiac Plus printer uses high-resolution thermal transfer technology with a unique electronic ribbon drive system. This system reduces the wear on printer parts and the maintenance adjustments normally associated with thermal transfer coders that use mechanical ribbon drives. The printer offers greater reliability and ease of operation compared to earlier systems. It can print barcodes, dates, text, and graphics onto flexible packaging films and labels.

The printer is a suitable replacement for either hot stamp or rotary coders. It can print in either of the following modes:

- Intermittent Mode (i.e., while the substrate is stationary)
- Continuous Mode (i.e., while the substrate is moving)

  It is suitable for use on most horizontal form/fill/seal, vertical form/fill/seal, and self-adhesive labelling machines.

The product is available in either left-handed or right-handed versions to suit different configurations of the packaging machine.

About this Manual

This manual is intended for the operator and contains information on the routine operation of the printer, including routine cleaning and maintenance tasks. Unless noted otherwise, all procedures in this manual can be performed by the operator of the printer.

Note: *Installation and service procedures are described in the service manual (refer "Related Documents" on page 2-2).*

This manual is a supplement to (and not a replacement for) formal training.

Related Documents

The Zodiac Plus Service Manual (P/N 361771-01 AA) is the other document that is available (through ICE Customer Service), for this printer.

The service manual contains information on installing, maintaining, troubleshooting, and servicing this printer. It also includes sections about the theory of operation, component identification, and the illustrated parts breakdown of the printer.

This Zodiac Plus Service Manual is intended for use only by trained service personnel. The service manual is a supplement to (and not a replacement for) formal training.

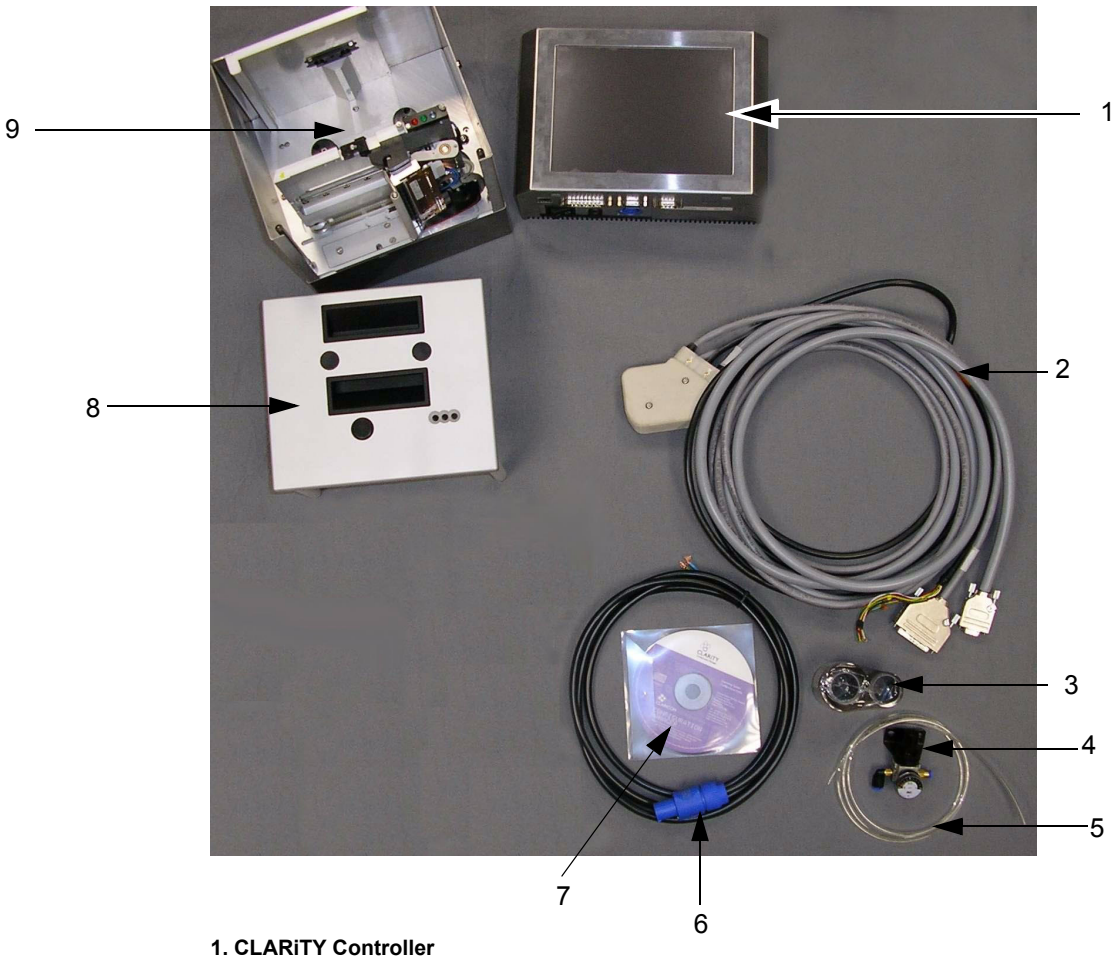
Warning

PERSONAL INJURY. Customers who intend to service and maintain the printer themselves must have only qualified personnel perform these procedures. Qualified personnel have successfully completed the training courses, have sufficient experience with this printer, and are aware of the potential hazards to which they will be exposed.

Overview of Printer Parts

The main parts of the Zodiac Plus printer is described as follows:

- CLARiTY Controller: Houses the power supply unit and touch screen. You can access jobs, setup jobs, set the various print parameters using the touch screen
- Printer: Houses the printhead and ribbon. The data is transferred to the printhead from the CLARiTY controller. The printhead prints onto the packaging film

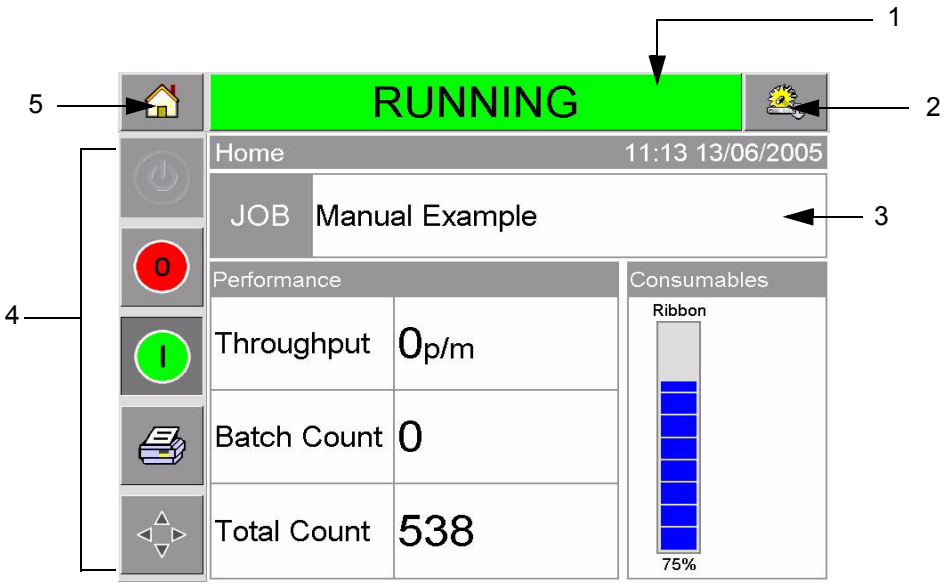


1. CLARiTY Controller
2. Low Profile Cable Assembly
3. Sample Ribbon Roll
4. Air Regulator
5. 4 mm Air Tubing
6. Power Cable
7. CLARiTY Configuration Manager CD-ROM
8. Cassette
9. Printer

Figure 2-1:Printer Configuration Parts

About the CLARiTY Operating System

CLARiTY is an icon-based operator control system. It has an easy-to-use touch screen and most areas of the display are "active", that is, simply touching an area of the screen is like pressing a "button" on a traditional control panel. The CLARiTY home screen's main buttons are shown in Figure 2-2.



1. Machine Status Button
2. Tools Button
3. Current Job Details Button
4. Control Frame Buttons
5. Home Button

Figure 2-2: CLARiTY *Home Screen*

Shortcut buttons take you directly to the key pages, regardless of the page that you are currently viewing.

Table 2-1 provides the list of shortcut buttons to be used to access the required pages.

Buttons	Display
	Tools Page for printer set up and diagnostics
	Home Page
	Fault and Warning Pages

Table 2-1: List of Shortcut Buttons

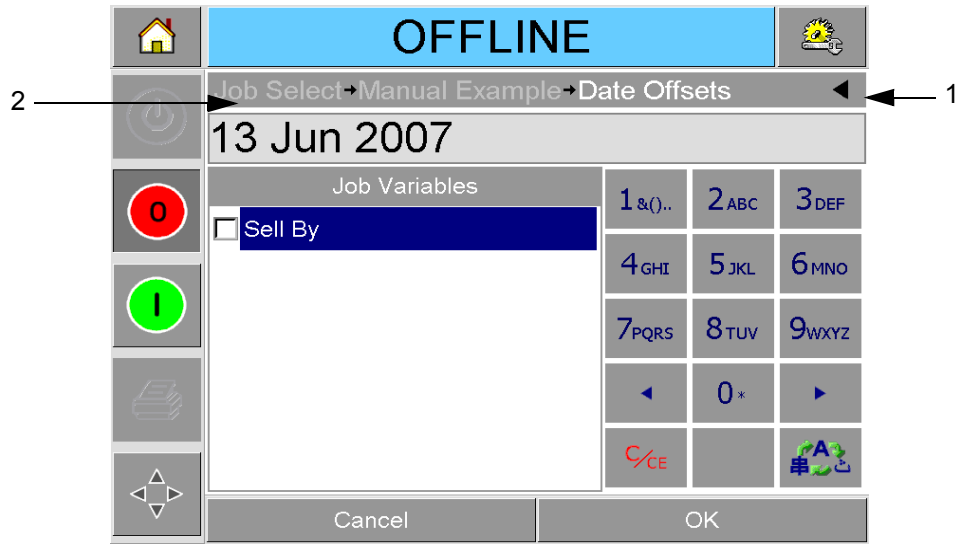
Table 2-2 shows the buttons used to select a new job or view the current job selected.

Buttons	Display
JOB	Job Page (to load the next image or job to be printed, and to enter any variable data)
Manual Example	Current Job (shown as the Current Job Name)

Table 2-2: Buttons for Viewing Jobs

The navigation bar (Figure 2-3) indicates the location of the current page in the menu tree. To use the navigation bar, do one of the following:

- Touch the Back button to go back to the previous page.
- Touch any title on the navigation bar to go to that page directly.



1. Back Button
2. Navigation Bar

Figure 2-3: Navigation Bar

On the left side of the home screen display is the Control Frame (Figure 2-2 on page 2-4). This contains buttons (Table 2-3) that stay active as long as the printer is powered up. These buttons are used for the immediate control of your printer.

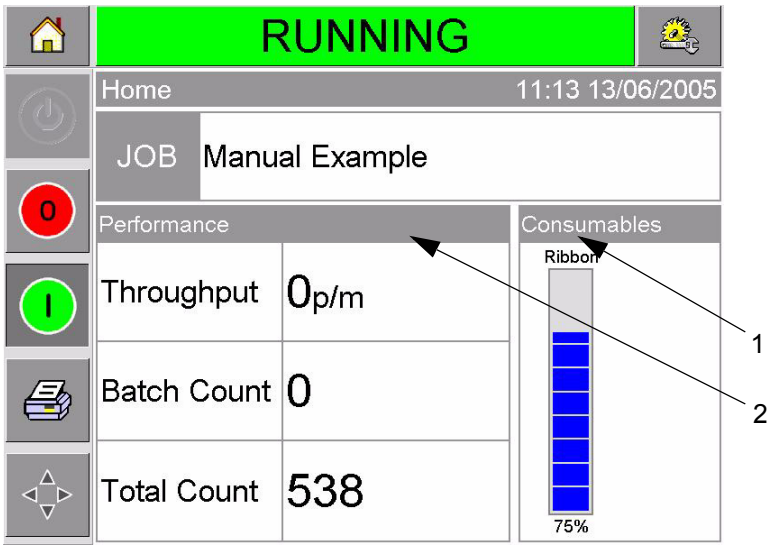
Button	Description
	Stop
	Start
	Test Print
	Print Registration

Table 2-3: Control Frame Buttons

The home screen contains two more buttons (Figure 2-4):

- Production Performance button
- Consumables Status button

Touch each of these areas to go to the pages that contain further details and statistics about production throughput and ribbon status.



1. Consumables Status Button
2. Production Performance Button

Figure 2-4: Performance and Consumables Status Buttons

Creating and Adding New Jobs

Print jobs are created offline using the CLARiSOFT™ image design software that runs on a PC.

This is a What You See Is What You Get (WYSIWYG) package that enables you to design the look and feel of a print image and define the content of special fields such as complex sell by date calculations.

When the job has been designed using CLARiSOFT, it is saved with a unique job name onto the PC's disc. Jobs are transferred into the Zodiac Plus local database by connecting the PC to the printer using an RS232 cable.

Alternatively, the Zodiac Plus printer has the ability to download a 'Job' database directly from a USB device. Jobs can now be created in CLARiSOFT and saved onto a USB device, ready for directly downloading into the printer. This removes the need to take a lap top into the production area.

For information on how to create images, refer the online help supplied with CLARiSOFT. For more information on how to transfer images to the printer, refer the Zodiac Plus Service Manual.

Once the jobs are stored in the printer's local database, the PC may be removed. Jobs are then selected for printing as described in "Selecting a New Job" on page 4-3.

The printer is supplied with two standard (default) job images:

- Default 4 Line Text
- Default Date Code

You can change the details in these two job images to suit your own needs. Refer Chapter 4, "Viewing and Selecting a New Print Job" for instructions on how to change an image.

Variable information such as batch codes or sell by dates can be entered by using a mobile phone style keypad described in "Changing Variable Information" on page 4-5.

Getting Started

3

This chapter contains the following topics:

- Setting the air pressure
- Switching the power on
- Setting the screen orientation
- Starting the printer
- Stopping the printer
- Understanding the printhead LEDs
- Setting the printer time and date
- Setting the language display
- Printing a test image

Setting the Air Pressure

The air pressure on the printer should be set to a value of 4.5 bar (63 Psi).

Caution

AIR PRESSURE SETTING. Do not set the pressure to a different level without consulting Interactive Coding Systems first. Proper operation of the machine relies on the accurate setting of the air pressure.

To view and set the air pressure on the printer, proceed as follows:

1 Locate the air pressure regulator (Figure 3-1 on page 3-2). It is close to the printhead and connected to the printhead by a 4 mm air line.

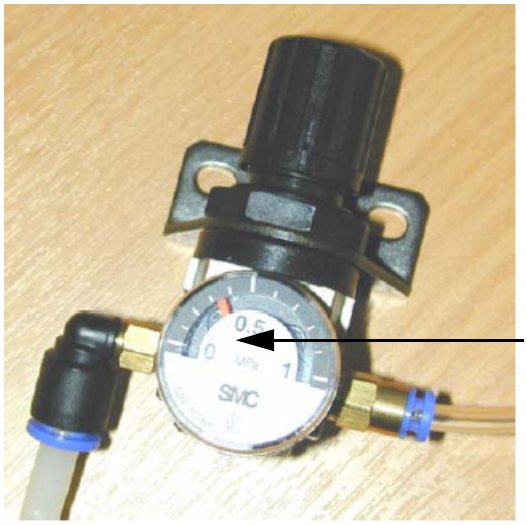


Figure 3-1: Air Pressure Regulator

2 Read the air pressure displayed on the regulator. It should show a value of 4.5 bar (63 Psi).

3 If the dial on the regulator does not display the correct value, lift the air regulator control knob and turn it clockwise to increase the pressure, or counterclockwise to decrease the pressure.

4 Push the control knob down to lock it in position.

Switching the Power On

To switch the printer on, turn the power switch on the CLARiTY controller to the I (On) position (Figure 3-2).

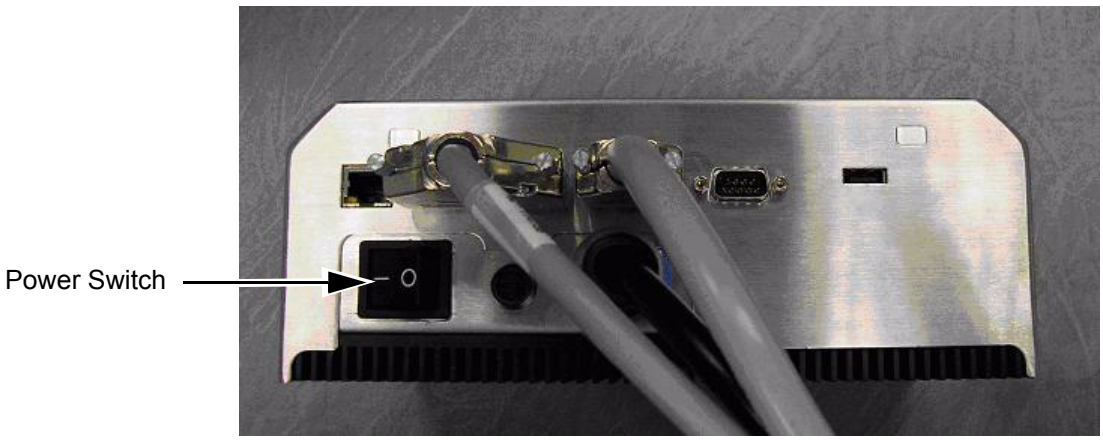


Figure 3-2: Printer Power Switch

The boot-up will take approximately 90 seconds. During which a "starting CLARiTY …" message appears. Following this, the CLARiTY home page (Figure 3-3) is displayed.

An initialization process of 15 seconds begins, during which the printer calibrates the ribbon drive. The status bar flashes the words STARTING UP and the amber LED flashes on and off. When the process is complete, the home page changes, as follows:

- The CLARiTY status panel changes from STARTING UP to OFFLINE.
- The Consumables area displays the percentage of ribbon remaining.
- In the Control Frame, the Start and Stop buttons are enabled.

Figure 3-3 displays the CLARiTY home page in the OFFLINE state.

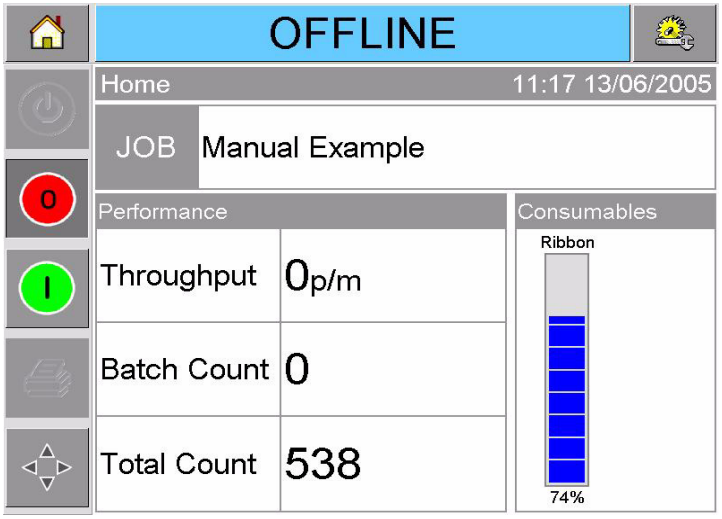


Figure 3-3: CLARiTY Home Page in the Offline State

Setting the Screen Orientation

Depending the position in which the CLARiTY controller is mounted, it may be necessary to rotate the screen image by 180 degrees.

To change the screen orientation, proceed as follows:

1 Touch the Tools button on the home page.

2 Touch the Setup button on the tools page.

3 Touch the Control button on the setup page.

Figure 3-4: Control Page

4 Touch Set Screen Orientation from the list. The Screen Orientation page appears.

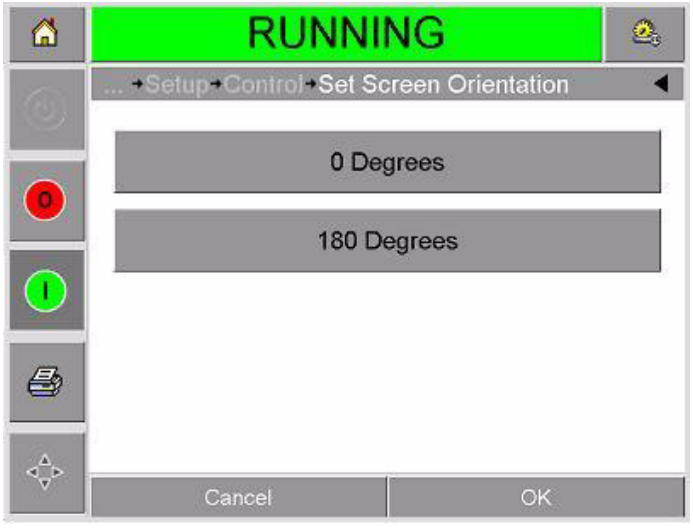


Figure 3-5: Screen Orientation

5 Select 0 or 180 degrees depending on your requirement and touch ok. The screen orientation changes.

6 Touch the Home button to return to the home page.

Starting the Printer

When the printer is switched on, the printer state changes from the SHUTDOWN to the STARTING UP and then to the OFFLINE state. Under this condition, all the external electrical inputs are ignored and the print sensor signals will not trigger a print. This enables you to check if the line and the printer are ready for production, before you switch the printer into the RUNNING state to start printing.

To switch the printer to the RUNNING state, touch the Start button (Figure 3-6).

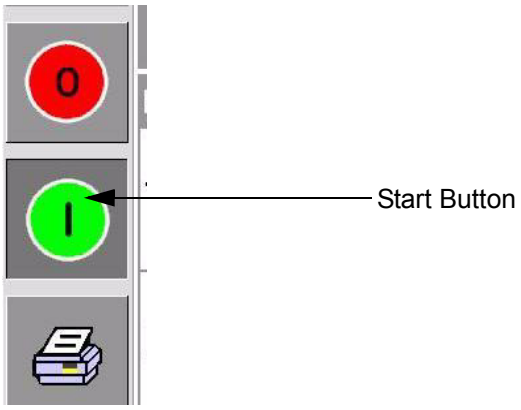


Figure 3-6: Start Button

Figure 3-7 displays the CLARiTY home page with the printer in the RUNNING state.

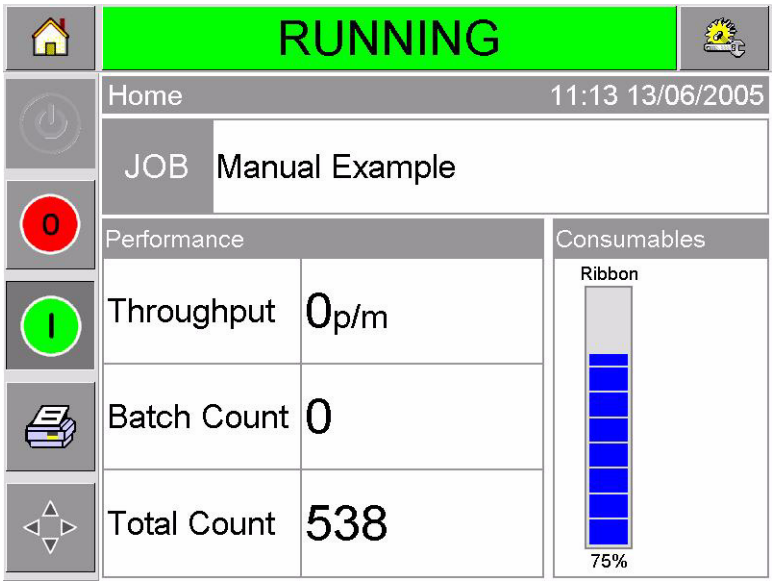


Figure 3-7: CLARiTY Home Page in the Running State

Note: *If the printer has a fault or a warning, RUNNING will be replaced with FAULT or WARNING. If FAULT is displayed, you must fix the problem before trying to print. Refer "Clearing a Fault Message or Warning" on page 5-2 for further information.*

Stopping the Printer

To stop the printer from printing, touch the red Stop button (Figure 3-8). The printer returns to the OFFLINE state.

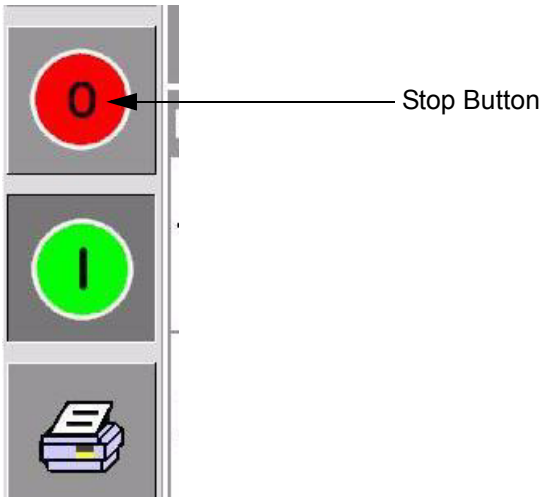


Figure 3-8: Stop Button

Understanding Printhead LEDs

Table 3-1 lists the printhead LEDs that indicate the status of the printer.

Color	On	Flashing	Off
Amber	Warning Signal	Fault Signal	No warning or fault
Green	—	Printhead is printing	—
Blue	Power On	—	No power to printhead

Table 3-1: LED Indicators

Note: *The amber LED also flashes when the printer is being powered on and the printhead is initializing.*

Setting the Time and Date

To set the time and date in the CLARiTY system, proceed as follows:

1. Touch the Tools button on the home page.
2. Touch the Setup button on the tools page.
3. Touch the Control button.
4. Touch and select Date and Time from the list.
5. Touch Date to set the Date, and the calendar page will appear, as shown in Figure 3-9.

OFFLINE
Tools→Setup→Control→Date And Time→Date
June 2005
Mon Tue Wed Thu Fri Sat Sun
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30
Cancel
OK

Figure 3-9: System Date Setup

6. Select the current month and year using the + and – keys.
7. Touch today's date to select it.
8. Touch OK to save the settings.
9. Touch Time to set the time. The time set page appears, as shown in Figure 3-10 on page 3-8.

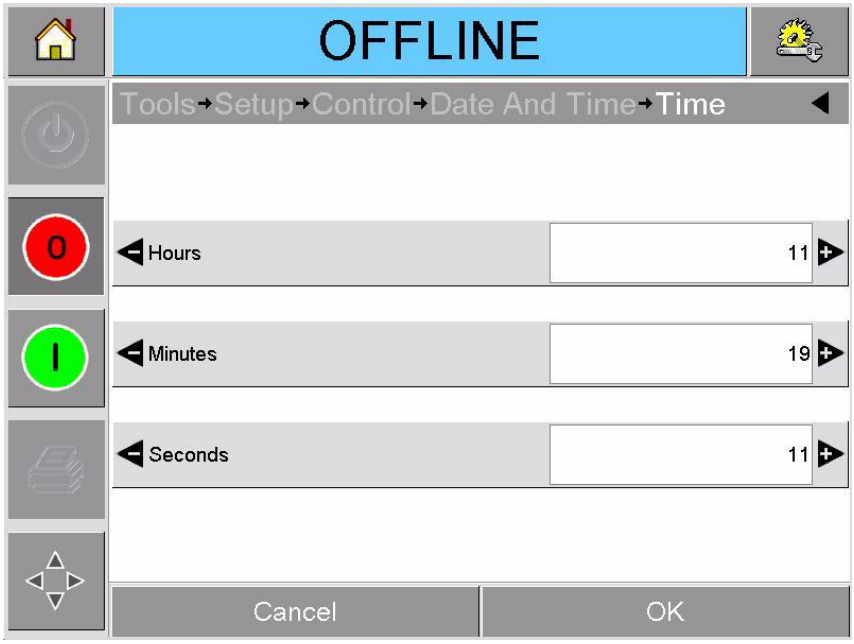


Figure 3-10: CLARiTY System Time Setup

10 Use the + and – keys to give a value for each of the settings [Hours, Minutes and (optionally) Seconds].

11 Touch OK to save the settings.

12 Touch the Home button to return to the home page.

Setting the Language and Region Display

To set the language displayed by CLARiTY, proceed as follows:

1 Touch the Tools button on the home page.

2 Touch the Setup button on the tools page.

3 Touch the Control button.

4 Touch and select Internationalization from the list. The current language and region is displayed as shown in Figure 3-11.

Figure 3-11: Language and Region

5 Touch the Region button. A list of available regions is displayed (Figure 3-12).

Figure 3-12: Region / Country List

6 Touch to select your region from the list (all the currently available regions will be listed) and touch OK.

7 Touch the Language button. A list of available languages is displayed

8 Touch to select your language from the list (all the currently available languages will be listed) and touch OK.

9 Touch the Home button to return to the home page.

The date format displayed in the home page changes according to the region selected.

Printing a Test Image

Typically, the Zodiac Plus printer is used on a packaging machine where the print is triggered by a sensor or a Programmable Logic Controller (PLC).

A test image can be printed before running the printer to check if the printed image is of acceptable quality. The Test Print button (Figure 3-13), will appear greyed out if this feature has been disabled by the installation engineer. Also, the printer must be set to the RUNNING state for the Test Print button to be available.

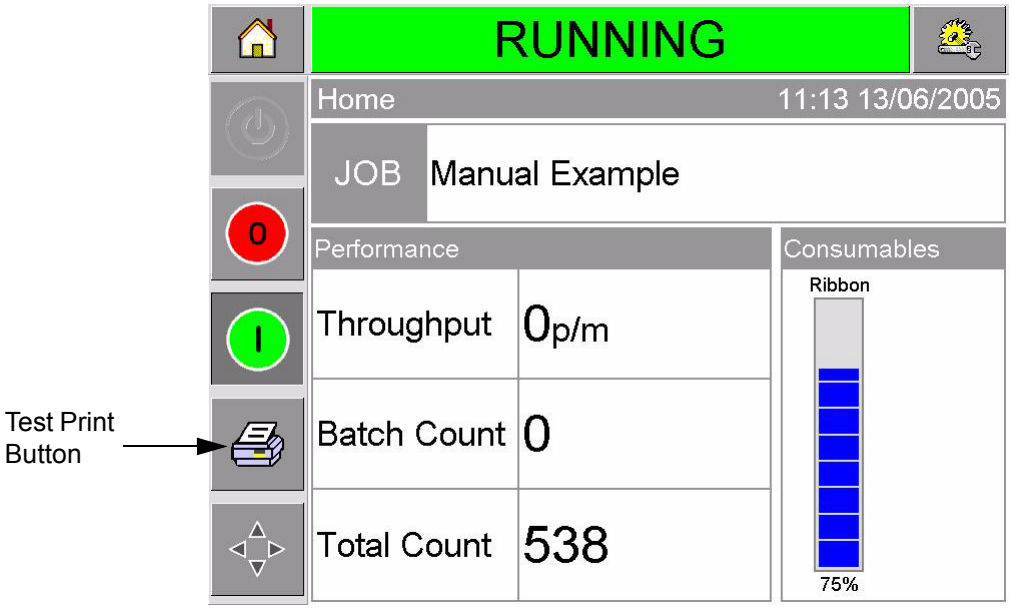


Figure 3-13: Test Print Button

To perform a test print, proceed as follows:

1. If the printer is in the OFFLINE state, press the Start button to put the printer in the RUNNING state.
2. Ensure that the packaging film is placed under the printhead, if the printer is in an intermittent application, otherwise ensure that the packaging film is travelling past the printhead.
3. Touch the Test Print button in the CLARiTY's control frame (Figure 3-13). The printer performs the test print.
4. Examine the test print to check if the image has been printed correctly.

Viewing and Selecting a New Print Job

4

This chapter contains the following topics:

- Viewing the current job or image
- Selecting a new job
- Changing variable information
- Changing the position or appearance of the print
- Deleting a job from the database

Viewing the Current Job or Image

The name of the current job is displayed on the CLARiTY home page (Figure 4-1). Before starting the production line, ensure that the current job is the job that you want to print.

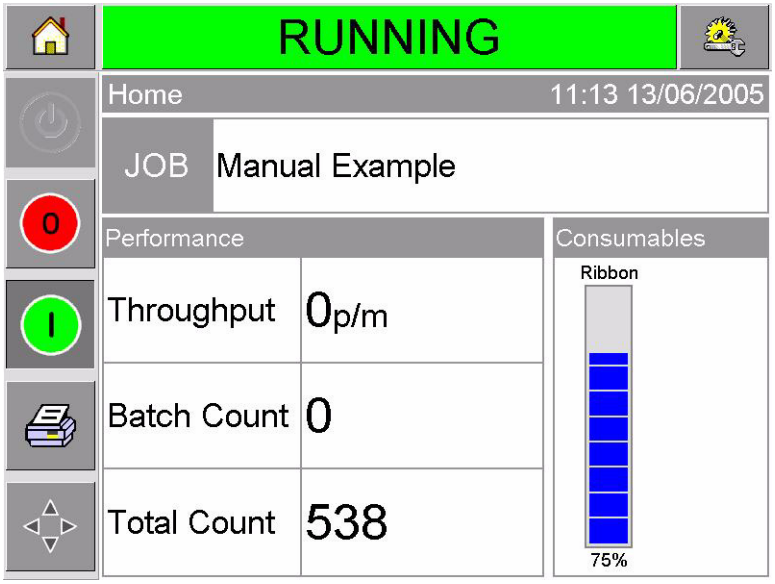
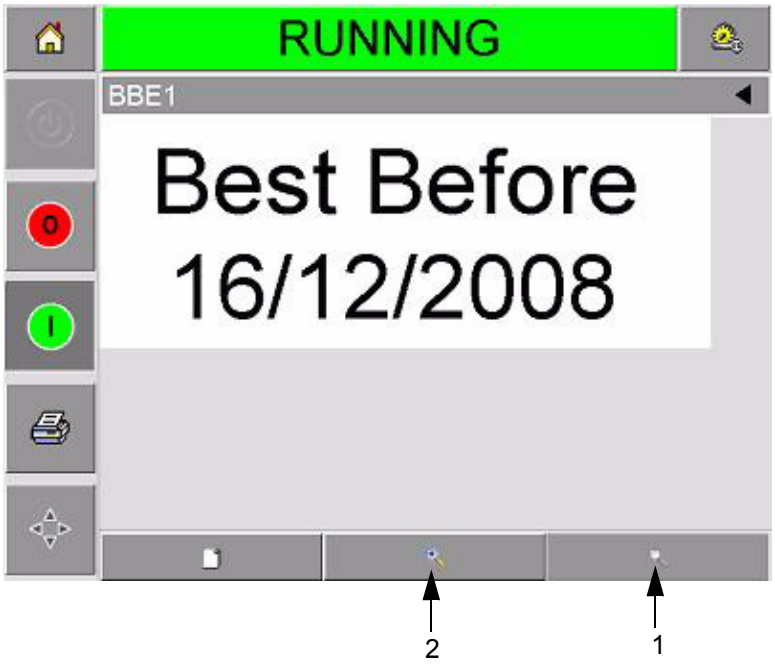


Figure 4-1: CLARiTY Home Page

To view more details of the current job, proceed as follows:

1 Touch the current job area on the home page screen. This will display the details of the job, as shown in Figure 4-2 on page 4-2.



1. Zoom Out Button
2. Zoom In Button

Figure 4-2: Current Job Details Display

2 To magnify the image on the screen, touch the Zoom In button (Figure 4-2). This allows you to view the details of the complicated images easily.

Figure 4-3 shows a magnified image, along with an activated scroll bar to enable scrolling along the length of the selected image.

Figure 4-3: Magnified Image

If you are satisfied that the correct job is displayed, you can start the printer, as described in "Starting the Printer" on page 3-5. If the current job is not the job that you want to print, refer to the instructions in "Selecting a New Job" on page 4-3.

3 Touch the Back button on the navigation bar, or the Home button to return to the home page.

Selecting a New Job

If you want to print a job that is not displayed as the current job, you can select a different one.

To select a different job, proceed as follows:

1 Touch the Job button on the home page. A list of available jobs is displayed (Figure 4-4).

Figure 4-4: Job List

2 Touch the name of the required job in the list, as shown in Figure 4-5 on page 4-4 and then touch ok.

If the list is long, a "scroll bar" appears to the right of the list. Touch the up or down arrow buttons on the scroll bar to move through the list.

Alternatively, you can type the name of the job using the keypad (Refer "Changing Variable Text Information" on page 4-5).

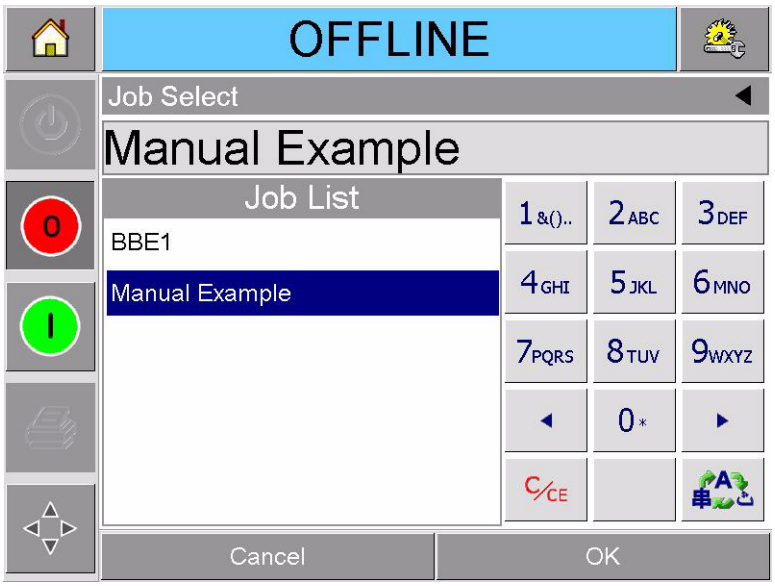


Figure 4-5: Job Selection

If the job includes information that you can change (i.e, job variables such as, batch codes or expiration date), CLARiTY prompts you to choose the information that you want to modify. In the example in Figure 4-6, there is only one item of variable information, the Sell By date. The current value for this date is 13 June 2007, as shown in the data window.

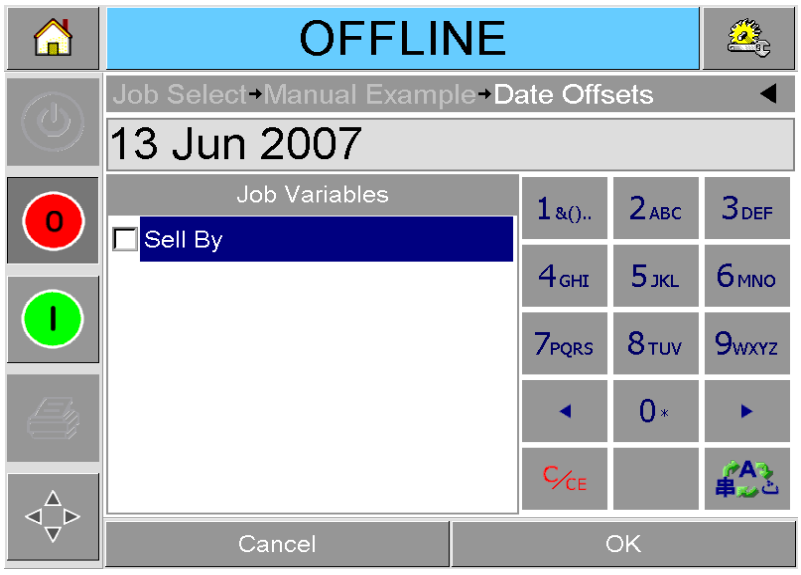


Figure 4-6: Variable Information in Data Window

- If the information shown is not correct for this job, refer "Changing Variable Information" on page 4-5 for information on how to change it.
- If the information shown in the data window of the printer is correct, proceed to steps 3 and 4 of this procedure.

3 Touch the OK button to accept the information and view a preview of the image.

4 Touch OK at the preview page to confirm the details. The new job becomes the current job.

Note: *You can select a new image or job while the printer is offline or while it is running. The new job replaces the current job only after you perform step 4.*

5 Touch the Home button to return to the home page.

To exit the job selection menu at any stage without making any changes, touch the cancel button.

Changing Variable Information

Some jobs contain job variables. Job variables are parts of the job image that can be changed. There are two types of job variables:

- Variable TEXT fields.
  For example, they are used for batch codes, product names, and other text labels.
- Variable DATE fields.
  For example, they are used for sell by dates.

If you select a job that includes variable information, CLARiTY prompts you to enter the required information, or choose from a list.

Note: *Each variable has a check box. The check box is unchecked initially. As you enter the variable data and touch OK, CLARiTY automatically checks the box. You can proceed to the next step only when all the boxes are checked.*

Changing Variable Text Information

To change the variable text information, proceed as follows:

1 Touch the required job variable from the list to select it (the first one in the list is automatically selected). The default data for that job variable appears in the data window (Figure 4-7 on page 4-6).

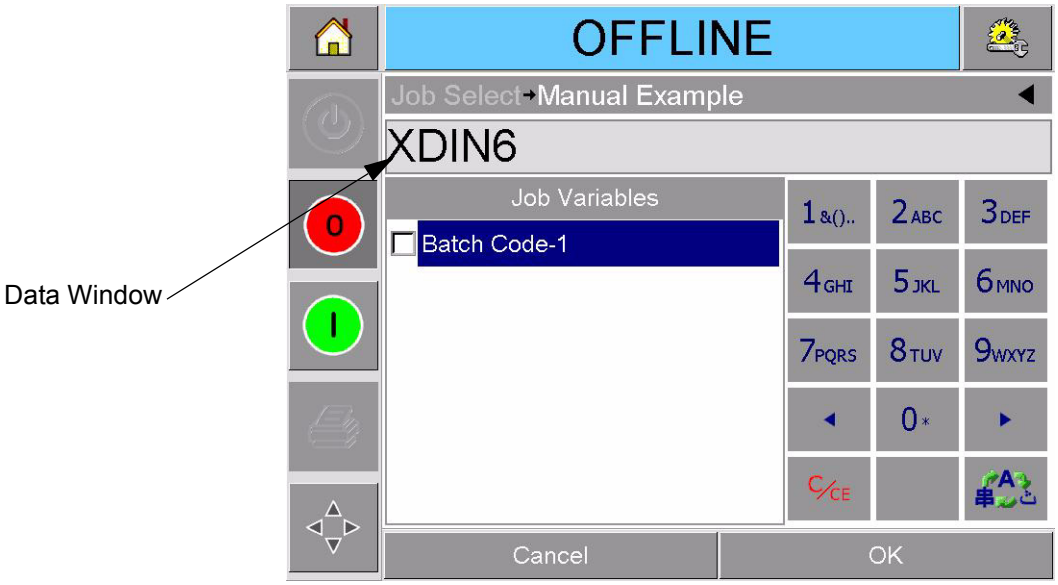


Figure 4-7: Default Data Window

2 If the information in the data window is the information that you want to print, go to step 6. If you want to change the information, perform steps 4, 5, and 6.

3 Touch to the right of the text in the data window. A flashing line is displayed in the data window. This is known as the 'cursor' and shows your position in the window. Use the alpha numeric key pads to enter the data.

The CLARiTY Operating system supports a number of standard languages for use with 'User Entered' text information.
Touch the 'language selection key', to cycle the keypad through the language selections available (Figure 4-8).

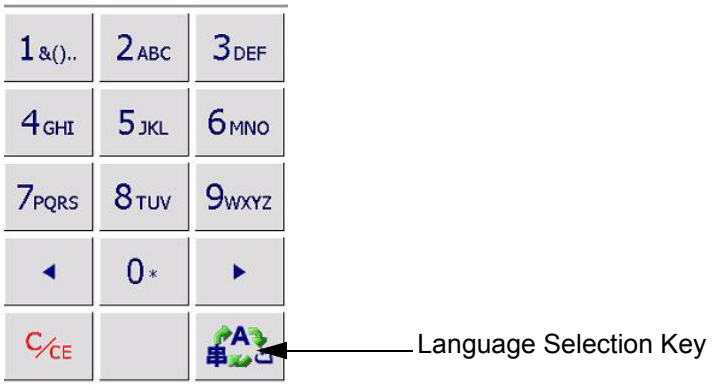


Figure 4-8: Default Keypad

The keypad functions the same way as the keypad on a mobile phone.

For example, to type the letter C, you must press the 2ABC key three times.

Table 4-1 to Table 4-4 lists the keys available on the alphanumeric keypad for various languages of the printer.

Default - English

Key	Characters (in turn)
1&()..	1.,?/:!-&;+#()'"_@$¢£€¥%<>¿¡§=¤
2ABC	ABC2abcÄÀÁÂÃÅÆÇäàáâãåæç¢
3DEF	DEF3defÈÉËÊèéëê€
4GHI	GHI4ghiÎÌÍîìí
5JKL	JKL5jkl£
6MNO	MNO6mnoÖÔÒÓØÑöôòóøñ
7PQRS	PQRS7pqrs$ß
8TUV	TUV8tuvÜÙÛÚüùûú
9WXYZ	WXYZ9wxyz¥
◀	Cursor left
0 *	0*
▶	Cursor right
C/CE	Backspace clear (hold down to clear)
	Space

Table 4-1: Alphanumeric Keypad Keys - English

Arabic - Persian

Key	Characters (in turn)
1 &()..	\1.,?/:!-&;+#()'"_@$¢£€¥%<>§=¤□
2 ABC	٢2ABCabc¢
3 DEF	٣3DEFdef€
4 GHI	٤4GHIghi
5 JKL	٥5JKLjkl£
6 MNO	٦6MNOmno
7 PQRS	٧7PQRSpqrs$
8 TUV	٨8TUVtuv
9 WXYZ	٩9WXYZwxyz¥
◀	Cursor left
0 *	0*
▶	Cursor right
C/CE	Backspace clear (hold down to clear)
	Space

Table 4-2: Alphanumeric Keypad Keys - Arabic

Hebrew

Key	Characters (in turn)
1 &()..	1.,?/:!-&;+#()'"_@$¢£€¥%<>§=¤□
2 ABC	2ABCabc¢
3 DEF	3DEFdef€
4 GHI	4GHIghi
5 JKL	5JKLjkl£
6 MNO	6MNOmno
7 PQRS	7PQRSpqrs$
8 TUV	8TUVtuv
9 WXYZ	9WXYZwxyz¥
◀	Cursor left
0 *	0*
▶	Cursor right
C/CE	Backspace clear (hold down to clear)
	Space

Table 4-3: Alphanumeric Keypad Keys - Hebrew

Russian

Key	Characters (in turn)
1 &()..	1.,?/:!-&;+#()"'_@$¢£€¥%<>§=¤□
2 ABC	АБВГ2абвгABCabc¢
3 DEF	ДЕЖЗдежзDEFdef€
4 GHI	ИЙКЛ4ийклGHIghi
5 JKL	МНОП5мнопJKLjkl£
6 MNO	РСТУ6рстуMNOmno
7 PQRS	ФХЦЧ7фхцчPQRSpqrs$
8 TUV	ШЩЫЪ8шщыъTUVtuv
9	ЬЭЮЯ9ьэюяWXYZwxyz¥
◀	Cursor left
0 *	0*
▶	Cursor right
C/CE	Backspace clear (hold down to clear)
	Space

Table 4-4: Alphanumeric Keypad Keys - Russian

4 Make the necessary changes to the information, as follows:

- Touch the C/CE key to delete text. The character to the immediate left of the cursor is deleted.
- Touch the left or right arrow keys to move the cursor to the left or right.
- Type the new information using the keypad to add new text.

5 Touch OK when you are satisfied that the information in the data window is correct. CLARiTY checks the check box. If there are only two variables in the job, CLARiTY automatically displays the second variable. If there are three or more variables, CLARiTY displays the list of job variables, so that you can select one.

When you touch OK at the final variable for this job (and all the check boxes are checked) CLARiTY shows you the preview of the image.

6 At the preview, perform one of the following:

- If you are satisfied with the image and you want to run the new job, touch OK. Products will be printed with the new image until you make further changes or select a new job.
- If you are not ready to print the job, you can leave this screen as it is. You can touch OK at a later stage, to select the job at that time.
- If you want to step back through the job select screens to make alterations to the variable data, touch Cancel.
- To cancel the job selection altogether, touch Home button.

Changing Variable Date Information

To change the variable date information, proceed as follows:

1 Touch the required job variable to select it from the list of job variables. The current information is shown in the data window (Figure 4-9).

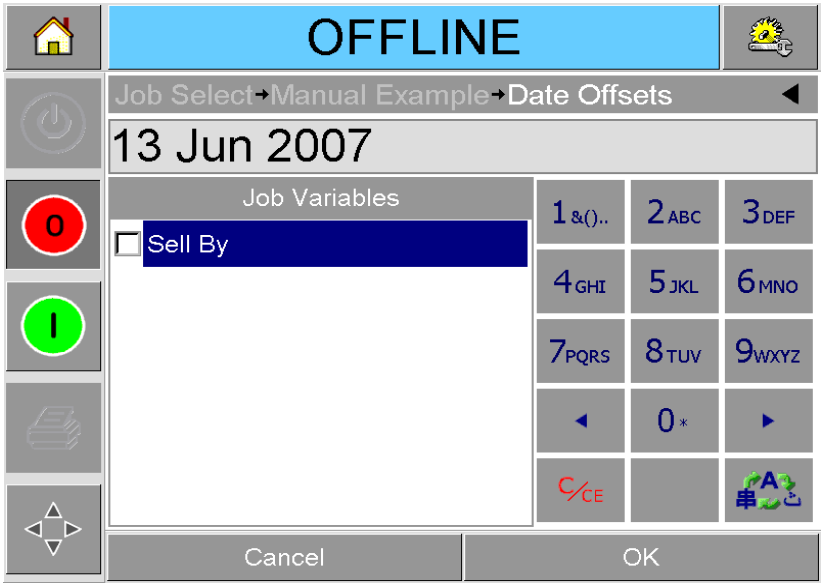


Figure 4-9: Default Data Window

2 If the information in the data window is the information that you want to print, go to step 6. If you want to change the information, perform steps 3 to 6.

3 Touch the data window to display the Calendar page (Figure 4-10).

Figure 4-10: Calendar Page

4 Touch the + or - button to change the month and year.

5 Touch the date on the calendar to choose the date of the month, and touch OK.

Note: *Any dates that are not available for selection because of pre-defined rules that may have been set in CLARiSOFT are dimmed.*

6 Repeat steps 3 to 5 for each date, if you have multiple dates in your job.

7 Return to the Job Variables display and ensure that the check box for each date variable is checked.

8 Touch OK to go to the preview display (Figure 4-11).

Figure 4-11: Preview Screen

9 Perform one of the following, at the preview screen:

- Touch OK, if you are satisfied with the image and you want to run the new job. Products will be printed with the new image until you make further changes or select a new job.
- If you are not ready to print the job, you can leave this screen as it is. You can touch OK at a later stage, to select the job at that time.
- Touch Cancel if you want to step back through the job select screens to make alterations to variable data.
- Touch Home button to cancel the Job Select altogether.

Changing the Position or Appearance of the Print

The following features can be changed and applied to modify the quality or position of the print image:

- Print position
- Print orientation
- Darkness of the print image
- Print delay (intermittent mode applications only)
- Print speed (intermittent mode applications only)
- Printhead print position (continuous mode applications only)
- Interleaved printing

The print settings can be viewed and changed through the printhead setup page by touching the Tools, Setup and Printhead buttons.

Figure 4-12 shows the printhead setup page for printers that have been installed to work on an intermittent motion packaging machine (prints only when the target material is stationary).

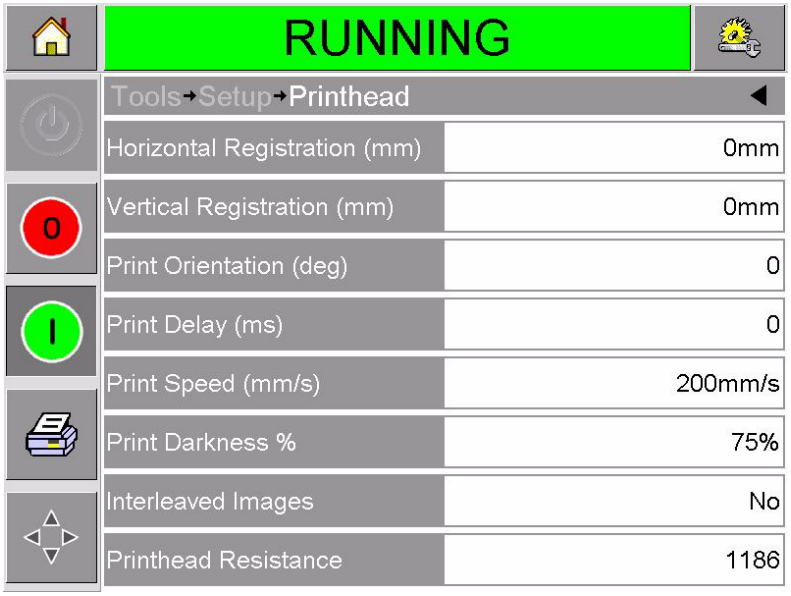


Figure 4-12: Printhead Setup Page for Intermittent Motion Applications

Figure 4-13 on page 4-15 shows the printhead setup page for printers that have been installed to work on a continuous motion packaging machine (prints while the target material is moving).

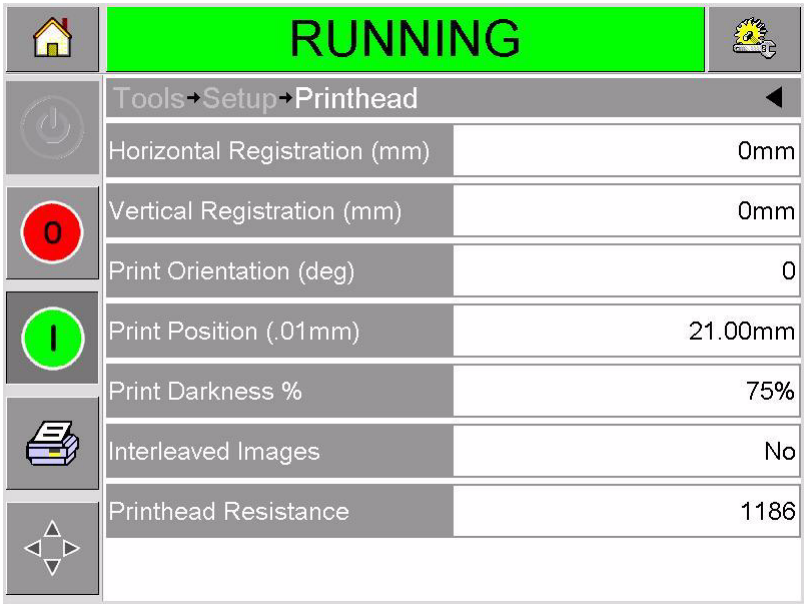


Figure 4-13: Printhead Setup Page for Continuous Motion Applications

Changing the Print Position

If the image does not print in the correct position on the packaging film, you can change the position by changing the Horizontal or Vertical Registration. This allows you to move the image inside the printing area window of the machine and to make small adjustments to the print location without moving the printer on the bracket. If the image is moved outside the print window or the available ribbon width, part of the image will not be printed.

- The Vertical Registration determines the position across the width of the packaging film or printhead.
- The Horizontal Registration determines the position along the length of the packaging film.

To change the print position, proceed as follows:

1. Touch the Tools button on the home page.
2. Touch the Setup button on the tools page.
3. Touch the Printhead button to open the printhead setup page (Figure 4-12 on page 4-14 and Figure 4-13).
4. Touch either the Horizontal Registration button or the Vertical Registration button on the printhead setup page to open the page for editing the required settings.
5. Use the + or - buttons (Figure 4-14 on page 4-16) to make small adjustments in the parameter settings.

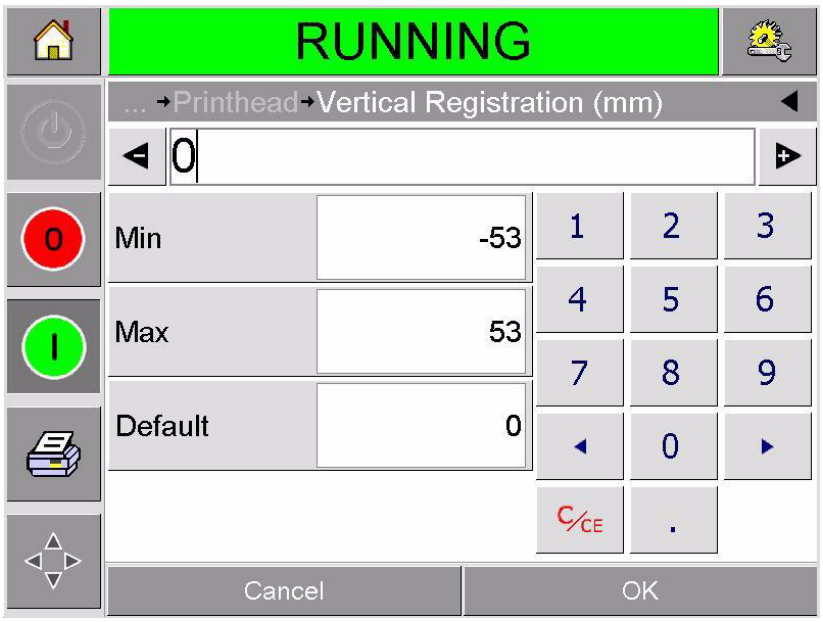


Figure 4-14: Vertical Registration Settings

Alternatively, do one of the following to make changes in the settings:

- Type a new value using the keypad.
- Touch the Min, Max, or Default buttons to select the minimum, maximum, or default (standard) values.

6 Touch OK to save the settings.

7 Touch the Home button to return to the home page.

Note: *The same adjustments can be made via the Print Registration button on the home screen.*

Changing the Print Orientation

You can change the orientation in which a job image is printed.

To change the print orientation, proceed as follows:

1 Touch the Tools button on the home page.

2 Touch the Setup button on the tools page.

3 Touch the Printhead button to open the printhead setup page.

4 Touch the Print Orientation bar to open the print orientation settings page (Figure 4-15 on page 4-17).

Figure 4-15: Print Orientation Settings

5 Touch the required value from the Options list to select 0°or 180°.

6 Touch OK to set the new orientation.

7 Touch the Home button to return to the home page.

Changing the Print Darkness

If the print darkness is too low, it causes the printed image to appear faded.

If the print darkness is set too high, the edges of the printed image appears blurred. This will also overdrive the printhead and shorten its lifetime.

Choose the lowest value of darkness that achieves a satisfactory quality print.

To set the print darkness, proceed as follows:

1 Touch the Tools button on the home page.

2 Touch the Setup button on the tools page.

3 Touch the Printhead button to open the printhead setup page.

4 Touch the Print Darkness button to open the print darkness setup page (Figure 4-16 on page 4-18).

Figure 4-16: Print Darkness Setting

5 Use the + or - buttons to make small adjustments in the parameter settings. Alternatively, do one of the following to make changes in the settings:

- Type a new number using the keypad.
- Touch on the Min, Max, or Default buttons to select the minimum, maximum, or default (standard) values.

6 Touch OK to save the settings.

7 Touch the Home button to return to the home page.

Setting the Print Delay

Note: *This feature can be applied only on intermittent mode applications.*

The print delay is the time interval between the printer receiving a print signal and starting a print. It can be increased to ensure that the target material has come to a complete stop before the printing starts. If printing occurs while the target material is still moving, the resulting image may appear to be stretched or squashed. To enable maximum throughput, the print delay should be set to the shortest time that produces consistent prints.

To change the print delay, proceed as follows:

1 Touch the Tools button on the home page.

2 Touch the Setup button on the tools page.

3 Touch the Printhead button to open the printhead setup page.

4 Select the Print Delay parameter to open the print delay parameters setup.

5 Enter a new value using the keyboard.

6 Touch OK to save the parameter settings.

7 Touch the Home button to return to the home page.

Setting the Print Speed

Note: *This feature can be applied only on intermittent mode applications.*

The thermal transfer ribbon used by the printer adheres more readily to some types of packaging materials than others. The print speed can be reduced to improve the bonding and print quality, and increased to achieve greater throughput in terms of packs per minute, by reducing the overall print cycle time.

To change the print speed, proceed as follows:

1 Touch the Tools button on the home page.

2 Touch the Setup button on the tools page.

3 Touch the Printhead button to open the printhead setup page.

4 Touch the Print Speed button to open the print delay setup page.

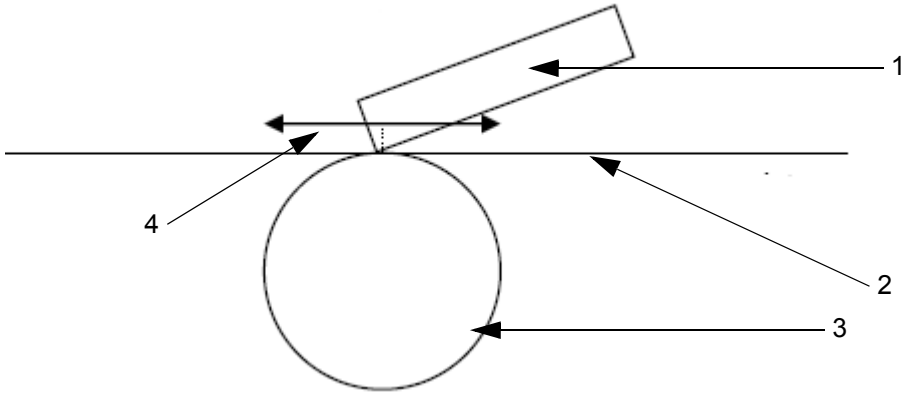
5 Enter a new value using the keypad.

6 Touch the Home button to return to the home page.

Setting the Printhead Position

Note: *This feature can be applied only on continuous mode applications.*

When printing continuously, the printhead will press the target material down against the roller, as shown in Figure 4-17.



1. Printhead
2. Target Material
3. Roller
4. Printhead Position Adjustment

Figure 4-17: Printhead Print Position

You can change the angle of the printhead against the target material, by changing the printhead position. This angle affects the print quality. If the angle is not suitable, the resulting print may appear faded.

To find a suitable printhead position, proceed as follows:

1. Touch the Tools button on the home page.
2. Touch the Setup button on the tools page.
3. Touch the Printhead button to open the printhead setup page.
4. Touch the Print Position button to open the print position parameters setup page.
5. Enter a new value using the keypad.

   Note: *You should change the print position parameters in steps of 1 mm. The print position parameter is in 0.01 mm units, so a change of 100 units will move the printhead by 1 mm.*

   Examine the sample prints from each position until you find the optimum print quality at the required print speed.
6. Touch the Home button to return to the home page.

Setting Interleaved Printing

This feature allows you to select a lower 'draft' quality print mode which halves the ribbon consumption of the machine.

To set to interleaved printing mode, proceed as follows:

1. Touch the Tools button on the home page.
2. Touch the Setup button on the tools page.
3. Touch the Printhead button to open the printhead setup page.
4. Touch Interleaved Images and select yes to switch this feature on, no to turn it off.
5. Touch the Home button to return to the home page.

Deleting a Job from the Jobs Database

To remove jobs that are no longer required, proceed as follows:

1. Touch the Tools button on the home page.
2. Touch the Database button on the tools page to open the database page. This page contains a list of all the available print jobs along with details of the space available for the storage of new jobs (Figure 4-18 on page 4-21).

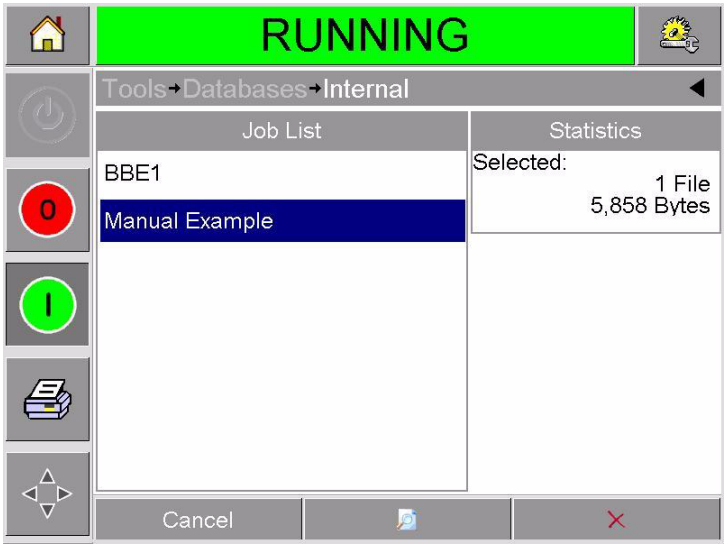


Figure 4-18: Database Data Window

3. Touch the name of the job that you want to remove from the list of jobs. The Delete and the Preview buttons will be activated.
4. Touch the Preview button to see the job image. Ensure that the job is the one that you want to delete.
5. Touch the Delete button either on the job preview screen or on the database screen.
6. Confirm the job to be removed (Figure 4-19).

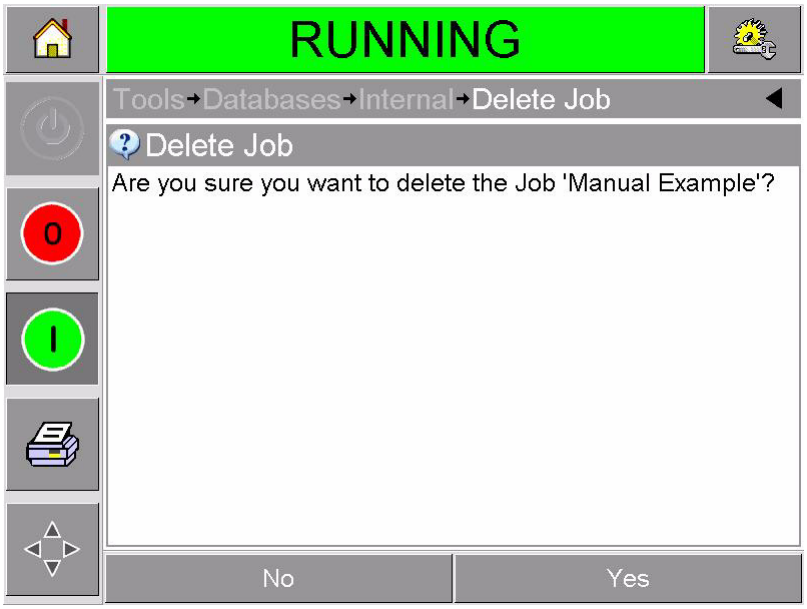


Figure 4-19: Confirmation Screen

7 Touch Yes to remove the job.

8 Repeat steps 3 to 7 to remove other jobs that are not required.

9 Touch the Home button to return to the home page.

Routine Fault Finding and Maintenance

5

This chapter contains the following topics:

- Working with fault messages and warnings
- Removing and reinstalling the cassette
- Checking and changing the ribbon
- Using different ribbon widths and colors
- Viewing the printer performance statistics
- Cleaning the printhead

Working with Fault Messages and Warnings

If CLARiTY displays a fault or warning, perform the following:

- Read the fault or warning message.
- Do the task that the message tells you to do.
- Clear the message from the display (sometimes the message clears automatically when the fault is corrected, and sometimes you have to clear it by touching the Clear button).

Reading a Fault Message or Warning

When a fault or warning occurs, CLARiTY displays the fault message in the status window at the top of all pages.

When a fault occurs, the printer's fault output relay will open. If this relay is wired into the packaging machine's stop circuit, it can be used to ensure that the packaging machine is stopped in the event of an error. This prevents the uncoded product from being produced when the printer has a fault.

For example, when the entire reel of ribbon has been used, CLARiTY will display the red FAULT banner with the message Ribbon Break, as shown in Figure 5-1 on page 5-2.

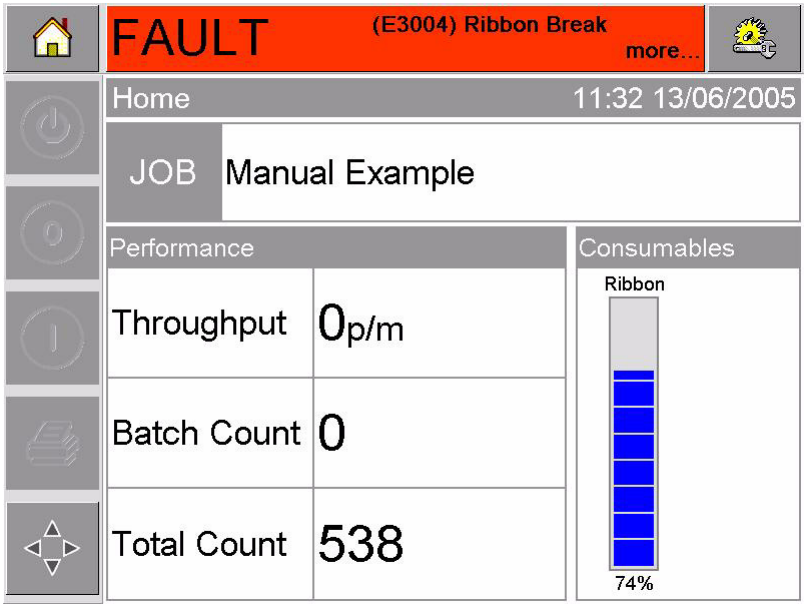


Figure 5-1: Fault Display

Several faults and warnings may occur at the same time. Faults will always be displayed first.

To view the faults/warnings in more detail and to view instructions on what to do about them, touch the red or yellow area in the status window at the top of the CLARiTY display.

Clearing a Fault Message or Warning

The instructions in this section provides information on how to clear a fault message. A similar procedure is used to clear warnings.

To view the details of the fault list, proceed as follows:

1 Touch the red FAULT message to view the list of faults (Figure 5-2 on page 5-3).

Figure 5-2: Fault Selection

2 Touch the fault name in the list to read more details about the fault.

3 Read the details of the fault and the on screen instructions that tell you what to do about the fault.

The example in Figure 5-3 shows a Ribbon break fault. To correct a Ribbon break fault, you need to re-attach the ribbon to the required spool (refer "Checking and Replacing the Ribbon" on page 5-7).

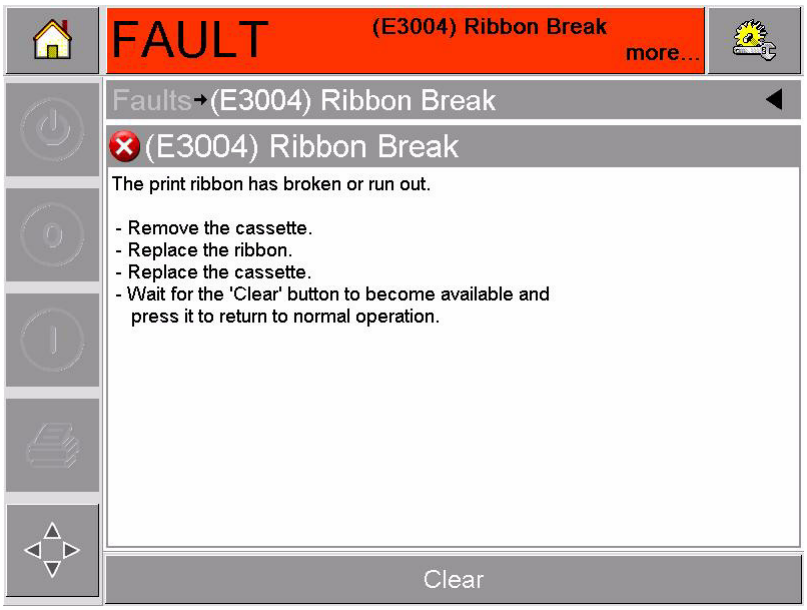

FAULT
(E3004) Ribbon Break
more...
Faults→(E3004) Ribbon Break
(E3004) Ribbon Break
The print ribbon has broken or run out.
- Remove the cassette.
- Replace the ribbon.
- Replace the cassette.
- Wait for the 'Clear' button to become available and press it to return to normal operation.
Clear

Figure 5-3: Fault Details Display

4 When you have corrected the fault, the Clear button is activated. Press Clear to remove the fault message.

Removing and Reinstalling the Cassette

To remove the cassette, proceed as follows:

1. Turn the printer to the OFFLINE state.
2. Press the circular black release button on the front of the printer, as shown in Figure 5-4 on page 5-4. The button clicks as the cassette unlocks from the printer body.

Figure 5-4: Cassette Unlocking

At this point, CLARiTY displays the Cassette Open fault (Figure 5-5).

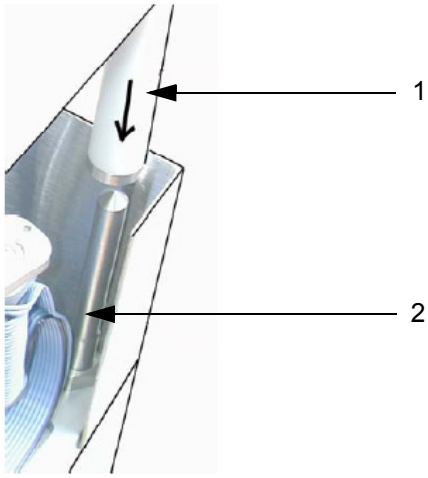
Figure 5-5: Cassette Open Fault

3 Hold the recessed handles and extract the cassette away from the printer body, as shown in Figure 5-6.

Figure 5-6: Cassette Removal

To reinstall the cassette, proceed as follows:

1 Hold the cassette above the printer body. Align the two locating rods (Figure 5-7) that protrude from the printer body into the holes at the ends of the two ribbon rollers.



1. Ribbon Roller
2. Locating Rod

Figure 5-7: Locating Rod Alignment

2 Push the cassette onto the printer body and press until it locks into place.

The Cassette Open fault message clears automatically, and the status is again shown as OFFLINE (Figure 5-8 on page 5-6).

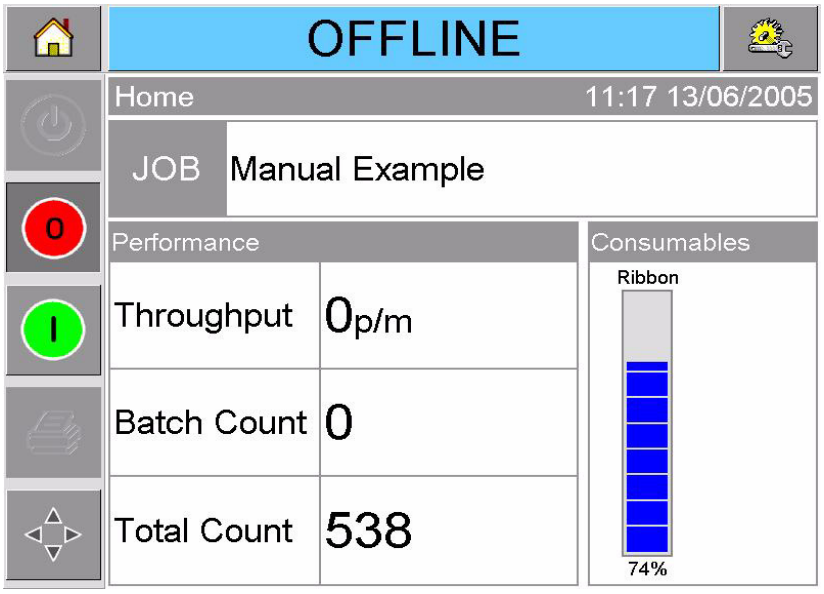


Figure 5-8: Offline State

To continue printing, refer "Starting the Printer" on page 3-5.

Checking and Replacing the Ribbon

Checking the Printer Ribbon Supply

The Consumables area of the home page (Figure 5-9 on page 5-7) displays a ribbon meter, showing the amount of unused ribbon remaining in the cassette.

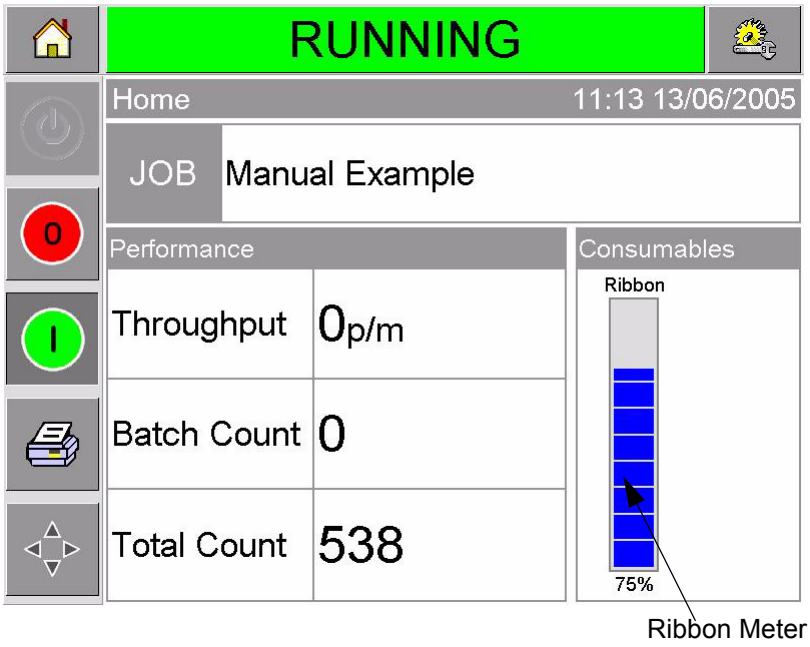


Figure 5-9: Printer Ribbon Supply

The meter displays three different colors to help check the ribbon level at a glance.

- BLUE = Adequate ribbon availability
- YELLOW = Approximately 50 m (164 ft) of ribbon remaining
- RED = Approximately 20 m (66 ft) of ribbon remaining

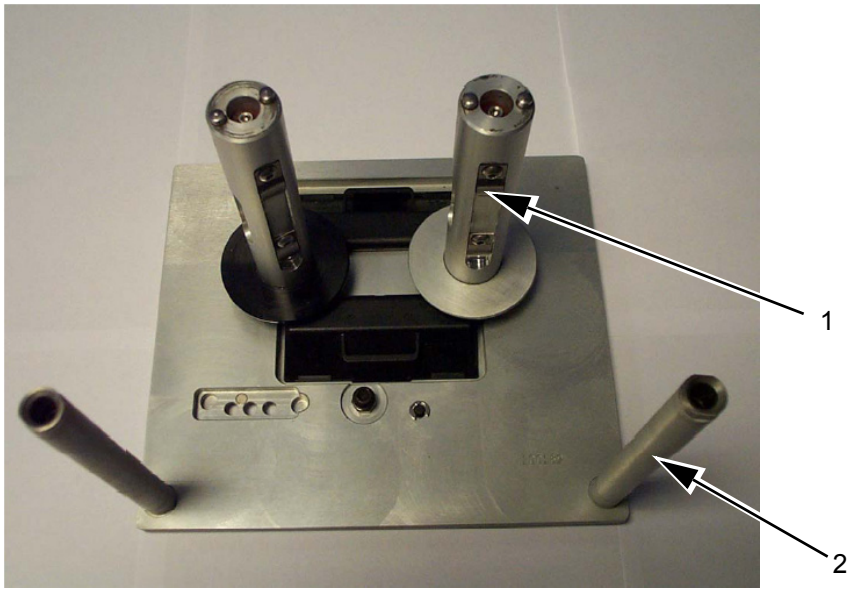
Replacing the Ribbon

Caution

EQUIPMENT DAMAGE. The use of incompatible ribbon can seriously damage your printer and such damage will not be covered by your printer warranty. Use only the ribbon that is approved by your dealer.

To replace the ribbon, proceed as follows:

1. Remove the cassette.
2. Put the cassette down on a flat surface with the ribbon spools facing upwards and the ribbon rollers towards you, as shown in Figure 5-10 on page 5-8.



1. Ribbon Spool (x2)
2. Ribbon Roller (x2)

Figure 5-10: Cassette Removal

3. Pull the two ribbon spools (one full of used ribbon) from the cassette firmly, as shown in Figure 5-11. The discs that are situated under each spool can be used to lever the spool off the cassette.

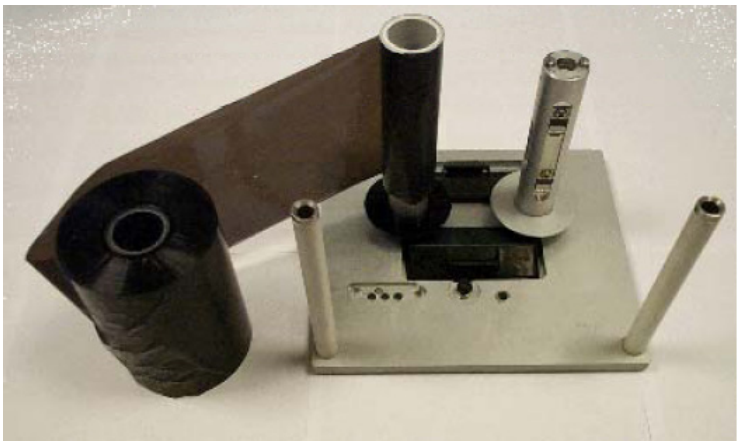


Figure 5-11: Ribbon Spools Removal

4. Discard the used ribbon and spools.

5 Open a new shrink-wrapped roll of ribbon, and unwind about 12 inches of ribbon (30 cm).

The spool holders on the cassette have different colored discs:

- The black disc is for the new roll of ribbon.
- The silver disk is for the empty roll.

When the printer is running, the new ribbon unwinds from the black holder, and winds onto the silver holder.

6 Slide the full spool onto the holder that has a black disc. The roll should be located such that the ribbon unwinds in the direction as shown in Figure 5-12.

Note: *Ensure that the spool is pushed completely down onto the holder.*

Figure 5-12: Ribbon Spool Installation

7 Route the ribbon so that it:

- unspools from the outside of the full roll
- goes around the outside of the white roller that is nearest to the full roll
- runs along the bottom of the cassette
- goes around the outside of the second white roller
- passes around the outside of the empty spool

8 Slide the empty spool completely down onto the holder that has a silver disc (Figure 5-13 on page 5-10).

Figure 5-13: Ribbon Spool Routing

9 Turn the empty spool by hand to take up any excess ribbon. Stop turning the empty spool when the full spool starts to rotate (Figure 5-14).

Note: *If the supplied ribbon has a transparent section or printed leader at the start, rotate the empty spool to take up all the transparent ribbon.*

Figure 5-14: Ribbon Spool Routing

10 Replace the cassette into the printer body.

Note: *Ensure the following:*

- *The ribbon runs in between the printhead and the printer's print roller or print pad*
- *The ribbon is not twisted or caught*
- *The ribbon has not become loose while replacing the cassette*

Sometimes you might need to remove a ribbon temporarily (perhaps because you need a ribbon of a different width for a job). When you put a partly used ribbon reel back into the printer, ensure that:

- You push the unused reel onto the black disc holder.
- You push the partly used reel onto the silver disc holder.

Using Ribbons of Different Widths and Colors

Different widths of ribbon can be used in the 53 mm and 107 mm variants of the printhead:

- The maximum ribbon width setting for the 107 mm printer is 110 mm. The minimum ribbon width for the 107 mm printer is 55 mm.
- The maximum ribbon width setting for the 53 mm printer is 55 mm. The minimum ribbon width for the 53 mm printer is 20 mm.

Caution

RIBBON SETTING. Failure to set the ribbon width correctly can cause a Ribbon break message to be displayed (even though the ribbon is intact). It can also cause the ribbon to wind too tightly onto the used ribbon spool. This can make it difficult to remove the spool of used ribbon.

When a ribbon of different width is to be inserted, the new values should be entered in CLARiTY. To do this, proceed as follows:

1. Touch the Tools button on the home page.
2. Touch the Setup button on the tools page.
3. Touch the Consumables button to open the consumables setup page.
4. Touch the Ribbon Width parameter.
5. Enter the new value using the keyboard.
6. Touch OK to save the settings.

Different colors of ribbon have different thickness. To ensure accurate end of reel warnings, select the correct color of the ribbon being used by the printer. To select ribbon color, proceed as follows:

1. Touch the Tools button on the home page.
2. Touch the Setup button on the tools page.
3. Touch the Consumables button to open the consumables setup page.

4 Touch the Ribbon color parameter and select the correct color from the list.

Figure 5-15: Ribbon Color Setting

5 Touch OK to save the settings.

6 Touch the Home button to return to the home page.

Viewing the Printer Performance Statistics

The following basic production performance details are shown on the CLARiTY home page:

- Product Throughput— It signifies the packs coded per minute.
- Total Count— It signifies the total packs coded by the printer.
- Batch Count— It signifies the total packs coded on the current job. This is reset to zero each time a new job is selected.

To view more information about performance statistics, touch the Performance area on the home page.

Cleaning the Printhead

Caution

EQUIPMENT DAMAGE. The use of an incompatible cleaning kit can seriously damage your printer. Such damage will not be covered by your printer warranty. Use only cleaning kits approved by your dealer.

To maintain maximum print quality, you should clean the printhead every time the ribbon is changed.

To clean the printhead, proceed as follows:

1. Switch the printer to the OFFLINE state.
2. Remove the cassette and place it aside.

   Note: *Do not attempt to clean the printhead with the cassette in place.*

3. Clean the printhead pixel line (Figure 5-16 on page 5-13), the white cassette rollers and the peel roller gently, using the cleaning swabs provided with the printer.

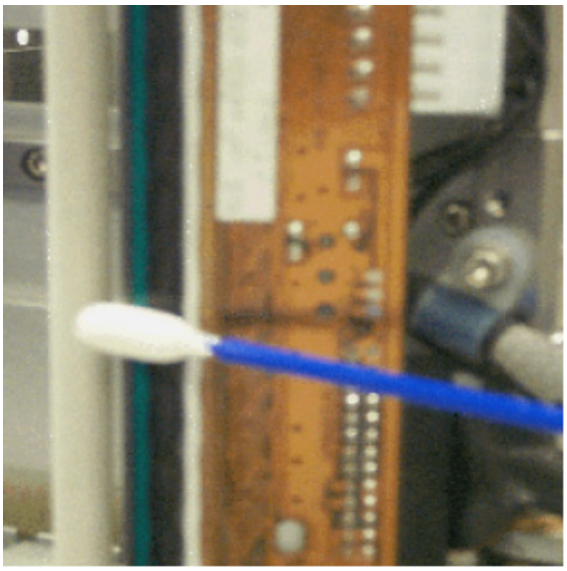


Figure 5-16: Printhead Cleaning

Note. *Use only isopropanol to clean the printer. Do not touch the printhead with sharp objects.*

If you have been supplied with a cleaning kit that contains cleaning wipes, use a wipe to clean the print line on the printhead carefully. If you have been supplied with cotton swabs and a bottle of cleaning solvent, take a new cotton bud and dip the bud into the solvent. Wipe the print line on the printhead carefully.

Note: *When the power is turned off, the printhead can be hinged away from the printer body to get better access to clean the print line.*

Note: *Allow one minute for the excess isopropanol to evaporate. Failure to allow this interval can result in damage to the printhead by thermal shock.*

4 Replace the cassette and lock it in place.

Master and Slave Printers

6

CLARiTY Master/Slave mode allows up to four printers to be connected together and to be used as a group (the group can have only one master). This chapter describes the use of Master/Slave mode at:

- Level 1-Group Job Select
- Level 2-Group Control

Further information on the CLARiTY Master/Slave mode is given in the Zodiac Plus Service Manual.

Group Job Select

Use Group Job Select to make sure that all the printers in the group are printing the same job. You can select jobs only on the master printer. The master printer tells the slaves which job to print.

When you use Group Job Select, the master printer shows additional information, as described below:

- It displays a fault message for any slave printer that does not respond to the master.
- The Printhead page (touch Tools, Diagnostics and printhead to view this page) contains a list of the printers in the group. Touch the name of a printer to display information about the chosen printer, as given in Table 6-1.

Printer	Page contains:
Master	The standard set of buttons enable you to view diagnostic information about the printer and information about the Master/Slave level that is being used
Slave	Enables you to view information about the connection between the slave and the master

Table 6-1: Master/Slave Diagnostics

- The Printhead page (touch Tools, Setup and printhead to view this page) enables you to exclude one or more slaves from the group. This is useful if a slave develops a fault and you want the other printers to continue to print the job. When the fault has been cleared, you can assign the printer to the group again.

Group Control

This level of operation (level 2) allows you to control the slave printers from the master. As with Group Job Select, you can select jobs only on the master printer. The master printer tells the slaves which job to print. The slaves can be assigned and excluded from the group, as described in “Group Job Select” on page 6-1.

You can use the master printer to change setup parameters for any printer in the group.

The user interface on the master printer also displays the following additional information:

- The Consumables information for each printer in the group.
- The Batch Count and Total Count values for the group as a whole. Total Count values for each printer in the group are also available.
- The fault or warning messages for both the master and slave printers (the slaves will show only their own faults or warnings).
- The diagnostics information about each printer in the group.

Specifications

7

This chapter contains the following topics:

- Technical specifications
- System specifications
- Print specifications
- Networking and external communications
- Printer dimensions

Technical Specifications

Table 7-1 lists the technical specifications of the printer.

Technical Specification	Zodiac Plus	Zodiac Plus LA
Printer		
Unique SolidState Ribbon Drive	Intermittent Motion and Continuous Motion	Intermittent Motion and Continuous Motion
Printhead	53 mm (2.1”), 300 dpi, 12 dots/mm	107 mm (4.2”), 300 dpi,12 dots/mm
Print Area - Intermittent Motion Mode	53 mm (W) x 75 mm (L) (2.1”x2.9”)	107 mm (W) x 75 mm (L) (4.2”x2.9”)
Print Area - Continuous Motion Mode	53 mm (W) x 135 mm (L) (2.1”x5.3”)	107 mm (W) x 200 mm (L) (4.2”x7.9”)
Ribbon Width	20 mm-55 mm (0.8”-2.2”)	55 mm-110 mm (2.2”-4.2”)
Maximum Ribbon Length	1000 metres (3280’)	600 metres (1968’)
Intermittent Motion Mode	50 mm/sec-800 mm/sec (1.9”/sec-31.5”/sec) #1	50 mm/sec-520 mm/sec (1.9”/sec-20.5”/sec)[1]

Table 7-1: Technical Specifications

Technical Specification	Zodiac Plus	Zodiac Plus LA
Print Speed		
Continuous Motion Mode	40 mm/sec-800 mm/sec (1.6”/sec-31.5”/sec) #1	40 mm/sec-520 mm/sec (1.6”/sec-20.5”/sec)[1]
Maximum Throughput Mode (600m ribbon max)	Standard - Software selectable	Standard - Software selectable
Increased Throughput Mode (1000m ribbon max)	Standard - Software selectable	Standard - Software selectable
Dimensions		
Printhead (including cassette)	204mm (W)x178 mm (H)x180 mm (D)	204 mm (W)x178 mm (H)x236 mm (D)
Controller/User interface	244 mm (W)x170 mm (H)x92 mm (D)	244 mm (W)x170 mm (H)x92 mm (D)
Inputs/Outputs		
External Inputs (Fully software configurable)	3 PNP inputs, configurable from: Print sensor 1 Print sensor 2 Print sensor select Inhibit print External error/stop Clear print queue	3 PNP inputs, configurable from: Print sensor 1 Print sensor 2 Print sensor select Inhibit print External error/stop Clear print queue

Table 7-1: Technical Specifications (Continued)

Technical Specification	Zodiac Plus	Zodiac Plus LA
External Outputs (Fully software configurable)	2 relay outputs (1 change-over + 1 N/O) and 2 PNP +24V outputs (max source current = 100mA per output), configurable from CLARiTY Configuration Manager On-line/Off-line Warning Busy Printing (actually energising print dots) Labeller feed Print cycle active (Start to end of print and ribbon re-wind) Update print queue full New allocation Print failed (i.e. interrupted in mid print) Fault	2 relay outputs (1 change-over + 1 N/O) and 2 PNP +24V outputs (max source current = 100mA per output), configurable from CLARiTY Configuration Manager On-line/Off-line Warning Busy Printing (actually energising print dots) Labeller feed Print cycle active (Start to end of print and ribbon re-wind) Update print queue full New allocation Print failed (i.e. interrupted in mid print) Fault
Operator Interface (CLARiTY)	8.4” TFT SVGA	8.4” TFT SVGA
Power supply requirements	90 - 264V, 47 - 63 Hz, single-phase type ‘TN’ or ‘TT’ 320VA (max), 2.75A @ 115V AC, 1.4A @230V AC, 60A max surge @ 230V, 30A max surge @ 115V	90 - 264V, 47 - 63 Hz, single-phase type ‘TN’ or ‘TT’ 320VA (max), 2.75A @ 115V AC, 1.4A @230V AC, 60A max surge @ 230V, 30A max surge @ 115V
Air supply requirements	6 bar, 90 psi, uncontaminated, 1.0 ml/ cycle (max)	6 bar, 90 psi, uncontaminated, 1.0 ml/ cycle (max)
Operating Temperature	5° - 40° C (41° - 104° F)	5°- 40° C (41° - 104° F)
Approvals[2]	CE//NRTL Approval (by METLAB) to UL60950	CE//NRTL Approval (by METLAB) to UL60950

Table 7-1: Technical Specifications (Continued)

1. Print speeds and throughput are resolution, substrate, application and set-up dependent.
2. Further information available on request.

System Specifications

Table 7-2 lists the system specifications.

System Specifications	Zodiac Plus
Operator Interface	Full color LCD Touch-Panel CLARiTY Interface
	Job Selection and database support as standard. WYSIWYG Print Preview
Operator Interface Languages	Language selection including English, Dutch, French, Italian, German, and Spanish[3]
Password protection	3 User-Levels
Remote Coder Configuration Software	CLARiTY Configuration Manager
	Offline Set Up and Parameter Storage available as standard
Diagnostics	On-Board Diagnostics as standard
On-Board Memory	64 MB Memory, Compact Flash

Table 7-2: System Specifications

3. Others available upon request.

Print Specifications

Table 7-3 lists the print specifications.

Print Specifications	Zodiac Plus
Image Design Software	Claricom CLARiSOFT Package Coding Design Software
Font Support	Full downloadable font support for Windows TrueType (including multiple languages and Unicode support)
Text	Scalable text including rotation, mirror and inverse printing
Supported Field Types	Fixed, Variable (User Entered), Merged, Database, Counters, Date, Offsets, Time, Paragraph (Text Blocks) Basic shape drawing (circles, rectangles and so on)
Special Functions	Auto real time and date functions
	Auto best before date calculation and concession management
	Auto incrementing, decrementing text, counters and barcodes
Barcode Printing	EAN 8, EAN 13, UPC-A, UPC-E
	Code 39, EAN 128, Code 128, RSS, ITF[3]
Graphics, Images and Logos	Multiple graphic formats supported using CLARiSOFT. Any size up to maximum print area
Print Functions	Mirror image printing, image rotation and inverse printing
Day Code Support	Hour, Day of Week, Day of Month, Week of Year, Month of Year, Year of Decade and Arabic Date Support
Code Options	Start of Day, Shift Codes, Factory, Machine, Line ID
Field Orientation	0°, 90°, 180°, 270°

Table 7-3: Print Specifications

3. Others available upon request.

Networking and External Communications

Table 7-4 lists the networking and external communications.

Networking and External Communications	Zodiac Plus Component
External Data Communication	RS232 Point-to-Point Communications
	Ethernet 10/100 Base TX network communications
	Binary and ASCII Comms Protocols and Windows and Drivers
	Host PC Mode (Remote Database) using CLARiNET
	USB Port
Master/Slave Functionality	Group Job Selection Function and Group Printer Control Functions
Network Control Software	Claricom CLARiNET Coder Independent Network Management Software

Table 7-4: Networking and External Communications

Printer Dimensions

Figure 7-1 shows the dimensions of the Zodiac Plus (RH) printer.

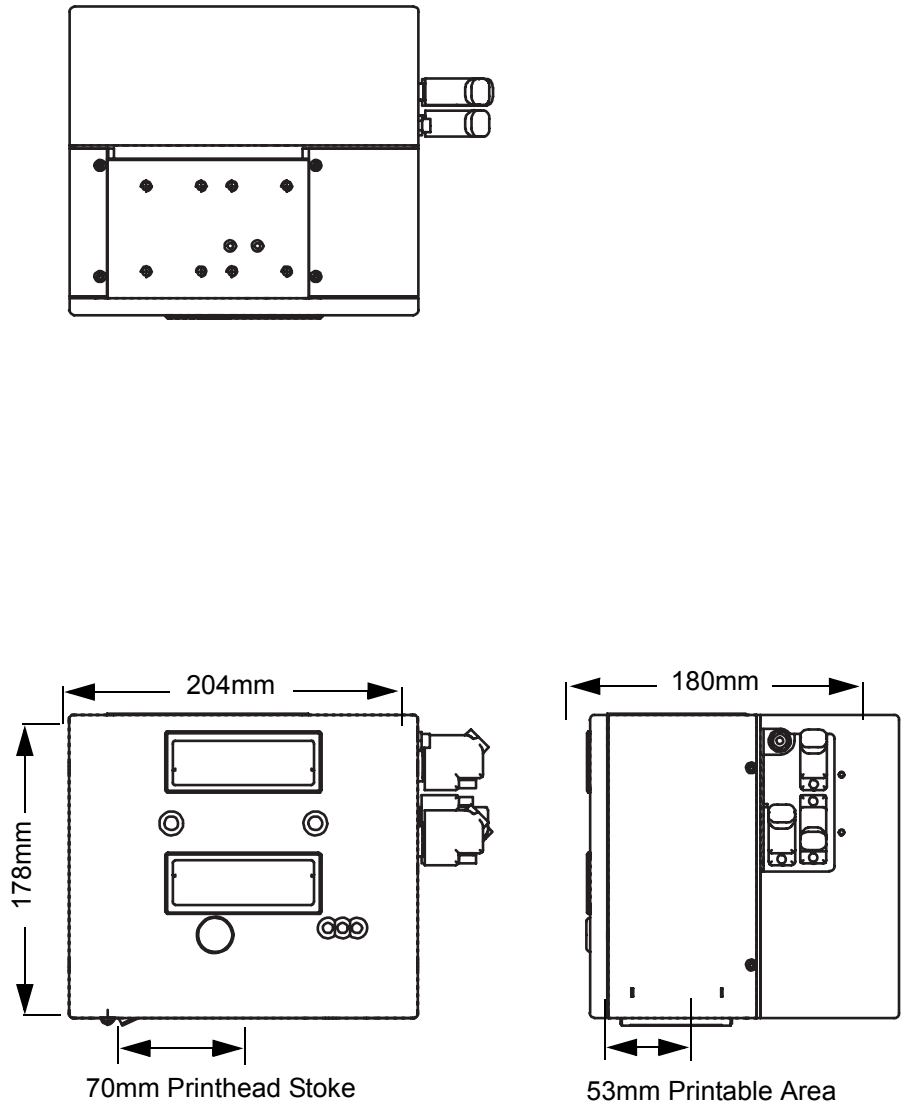


Figure 7-1: Zodiac Plus RH Printer Dimensions

Figure 7-2 shows the dimensions of the Zodiac Plus (LH) printer.

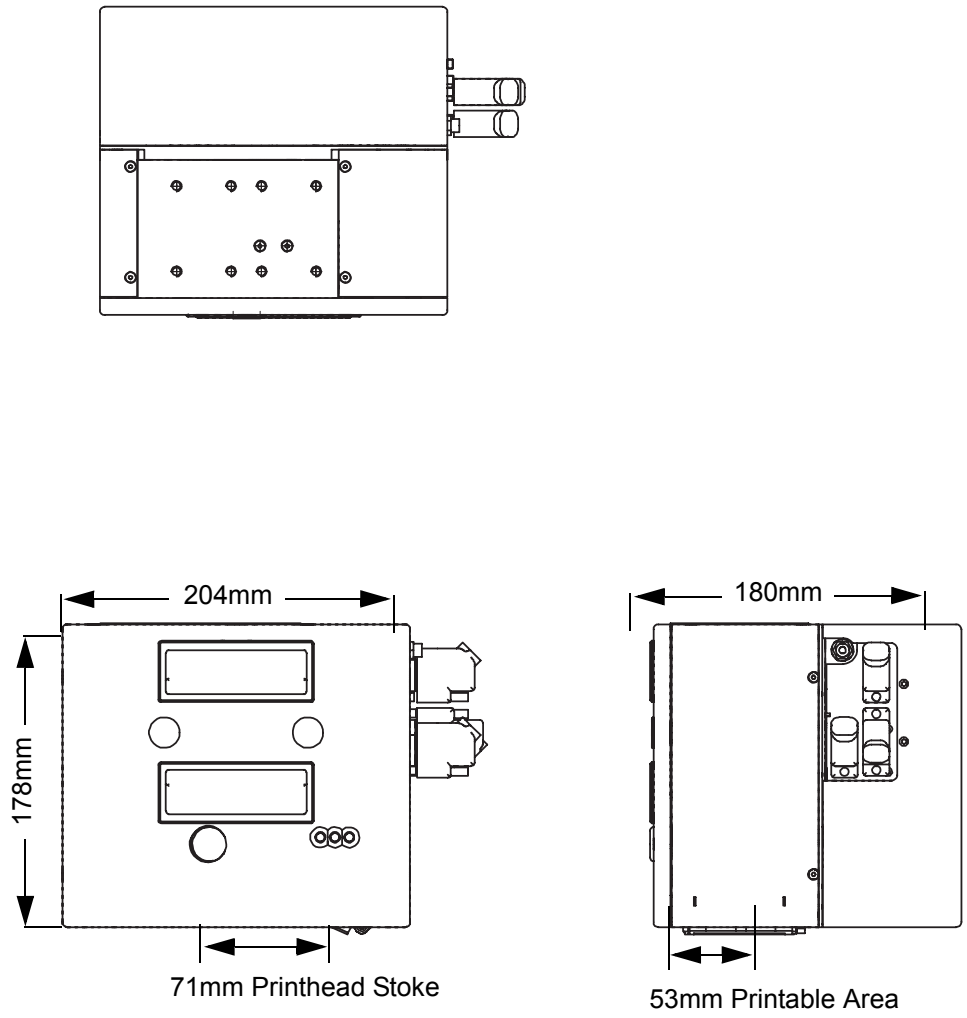


Figure 7-2: Zodiac Plus LH Printer Dimensions

Figure 7-3 shows the dimensions of the Zodiac Plus LA (RH) printer.

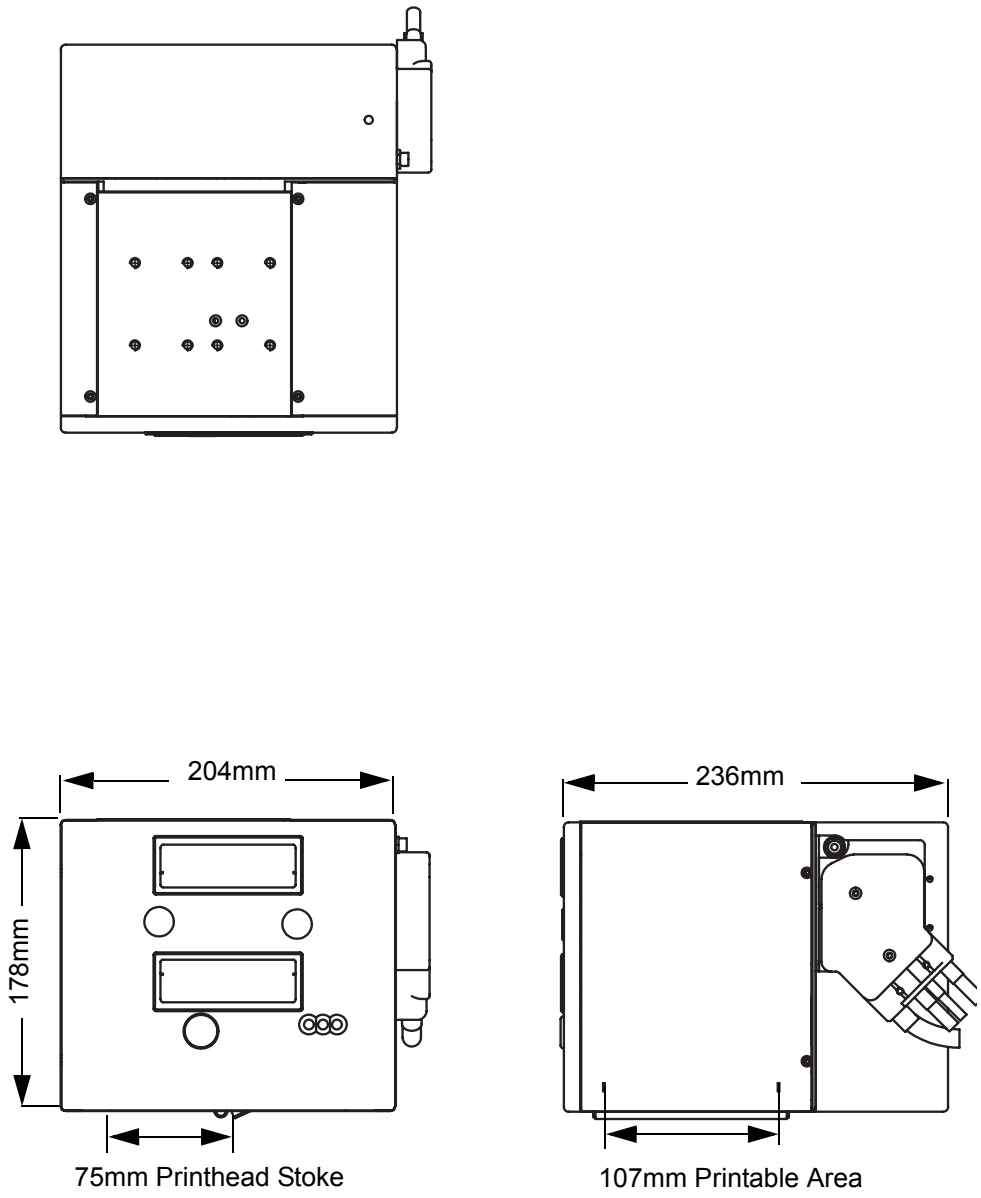


Figure 7-3: Zodiac Plus LA RH Printer Dimensions

Figure 7-4 shows the dimensions of the Zodiac Plus LA (LH) printer.

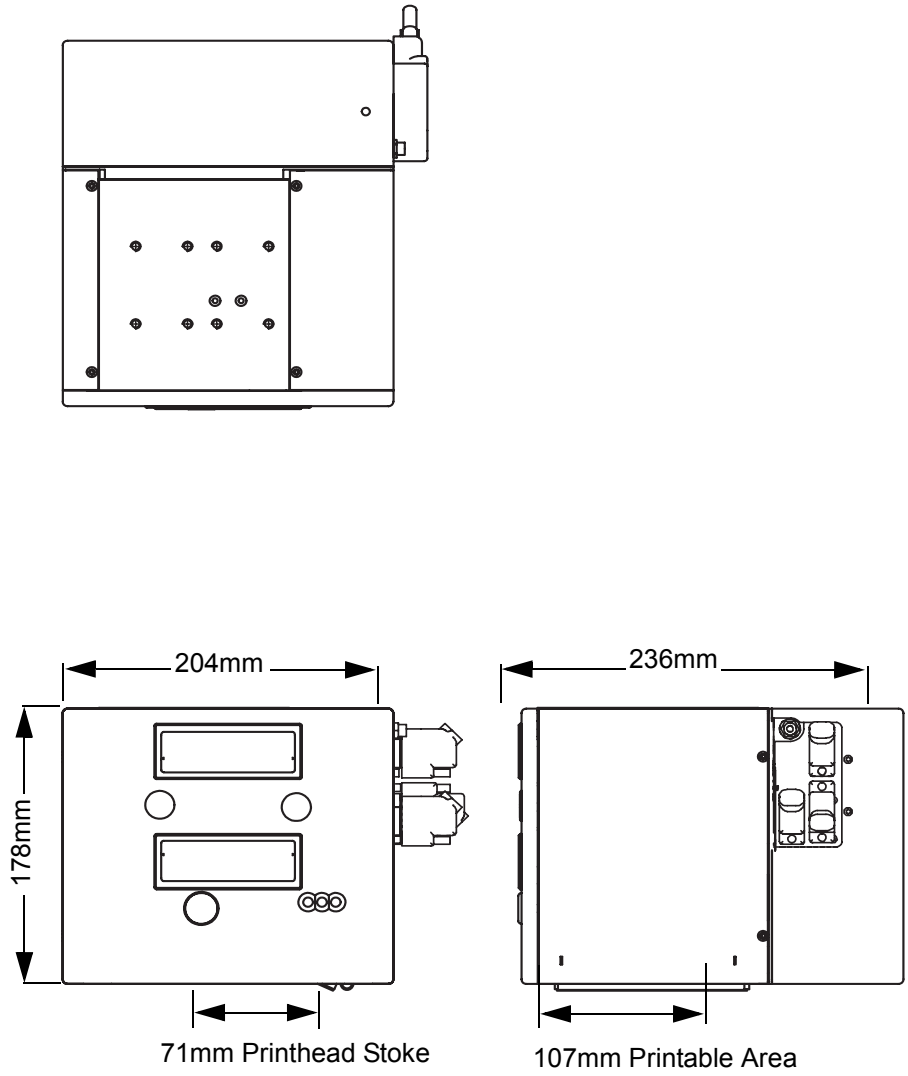


Figure 7-4: Zodiac Plus LA LH Printer Dimensions

Figure 7-5 shows the dimensions of the CLARiTY controller.

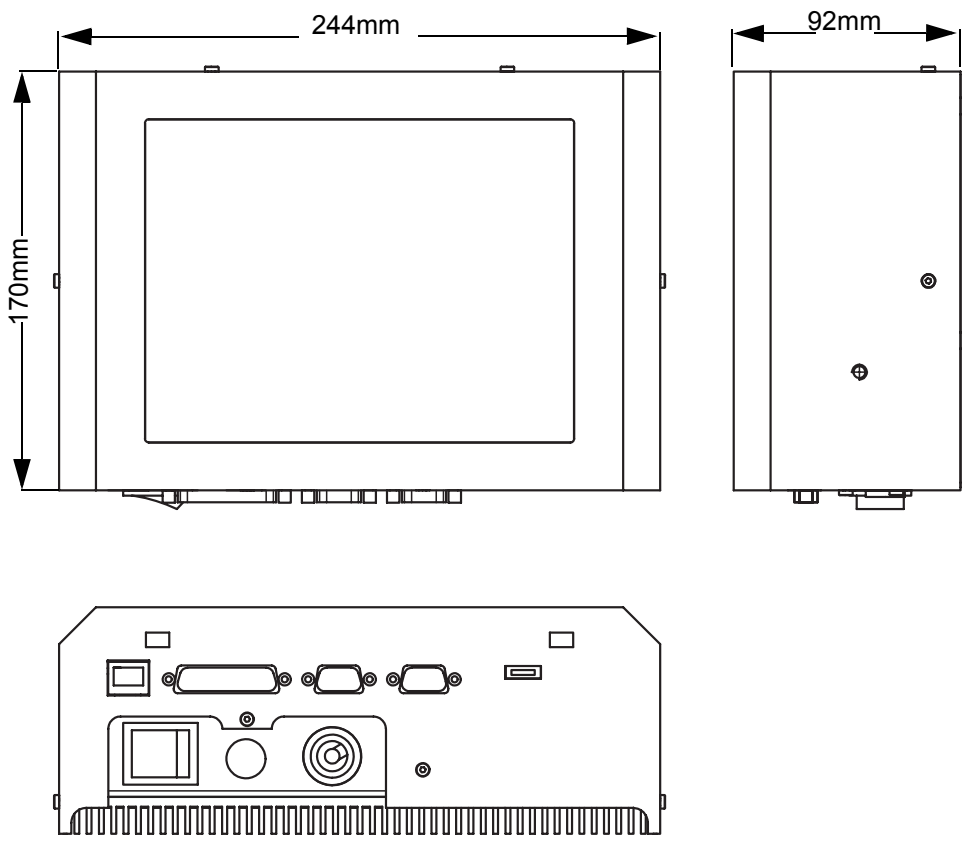


Figure 7-5: CLARiTY Controller Dimensions